DOMESTIC ENGINEERING

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ARE THERE TOO MANY PUNY AND NON-ESSENTIAL UNITS IN THE CONTRACTING BUSINESS?

CONSERVATION, co-operation and centralization are being recognized more and more as constructive factors in efficiency promotion in the world of production and distribution.

The day is perhaps not far distant, when all industrial effort will be reorganized along these lines. The fundamental object will be to seek the elimination of wasteful and destructive competition and to check the useless growth of multiplicity of puny business concerns engaged in the same phase of service.

The records of bankruptcy courts verify the remarks of a western banker that there are men, who embark in business principally because they enjoy the luxury of being able to boss something. It appears that, even though they are only puny imitations of real employers, they feel that they have risen above the level of the wage earner.

Doubtless there is more than a grain of truth in the saying that law schools have spoiled many a perfectly good mechanic and that medical institutions have ruined the future of more than one promising clerk.

It is equally true that the contracting business has spoiled many a journeyman, who was progressing nicely as an employee. As the head of a puny business he awoke to discover that his journeymen were actually acquiring more money as wage earners than he was as an employing plumbing or heating contractor.

There is a moral in the sad predicament of the contractors in the running, who will never "arrive." that his income does not equal or surpass that of his journeyman. The moral is this: Don't break into the contracting class unless you can deliver the goods.

It has been pointed out by leading men in the plumbing and heating trade that there are too many contractors in the running, who will never "arrive." Hundreds of estimates are made, where only a few would suffice. Wasteful and destructive competition continues as of yore between scores of "near" contractors, who race and scramble for this or that job like a pack of dogs after a bone.

The opportunity for realizing a really equitable profit from contracts is frequently lost in some communities, because there are too many puny and promiscuous estimators and not enough of the sound and responsible kind.

In some cities, where three plumbing and heating establishments would be more than enough to attend to all the available business and acquire a normal profit, a dozen or more shops are often in evidence.

Since it is universally true that too many cooks spoil the broth, it is likewise a demonstrable fact that a superfluity of contractors, figuring on the same job, will clog the wheel of profit.

Progressive men in the medical profession have frequently suggested that young graduate physicians should go into practice where they are actually needed—and not in communities which are already congested with physicians. This is applicable to any man, who is prepared to embark in business.

In discussing this matter of overcrowding in business, Stanley W. Finch, writing in Forbes Magazine, says:

"Tremendous waste results from our system of endlessly multiplying the number of our small shops, stores, restaurants and business places of all kinds. Thus we often find, in a single block or office building, scores of concerns engaged in practically the same kind of business, with their unnecessary consumption of space, heat and light; their duplication of furniture, fixtures and delivery cars, telephones and typewriters. Competition may be useful under certain conditions; but the American policy of encouraging the establishment of unlimited numbers of wholly unnecessary small competing business units promotes selfishness and waste and has long outlived whatever useful purpose it ever served."

"What we dignify by the term 'work' is often nothing but wasted human energy."

RETURNING CONDENSATION *in* HIGH *and* LOW PRESSURE HEATING SYSTEMS

Notes on Various Methods of Saving Condensation in Both High and Low Pressure Heating Systems

By Charles L. Hubbard

(Continued from Page 198 in the August 10th Issue.)

With this arrangement sufficient pressure must be carried in the heating system to force the water to the power house, if a trap is used, or to operate the pump, if the arrangement shown in Fig. 4 is made use of. Special low-pressure pumps may be obtained for this purpose, operating at 10 pounds pressure or less. In case it is desired to keep the pressure in the heating system down to less than 5 pounds, a high-pressure line should be carried to the different buildings to operate the return pumps or traps.

When the plant is made up of a number of independent buildings, an arrangement of this kind may be placed in each and the condensation returned to a central receiver in the power house by means of electrically driven centrifugal pumps, if the high-pressure line is objectionable. This arrangement is especially adapted to large plants, where the buildings are more or less scattered and at different elevations. If on practically the same level the return-line vacuum system with a vacuum pump located in the power house and attached to the end of the main return line makes a simpler arrangement, as it reduces the number of pumping units.

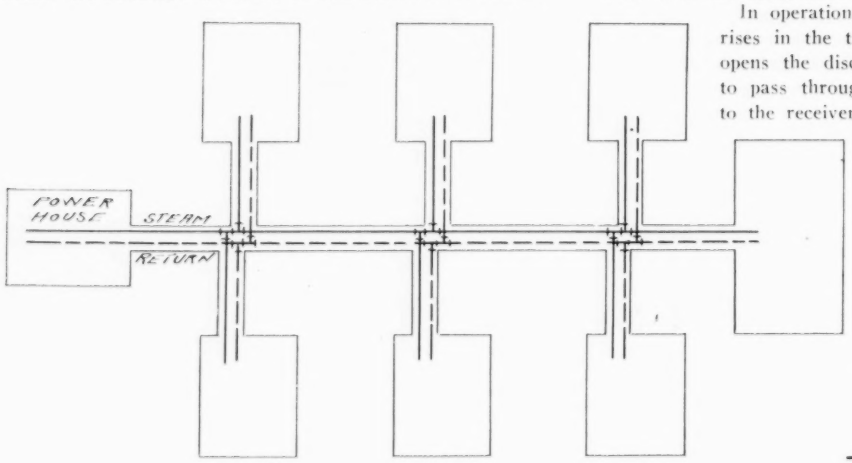


Fig. 5.

A typical layout, which has been found to work very satisfactorily in institutions, such as cottage hospitals, where a number of independent buildings are connected with the power house by basement corridors, is shown in diagram in Fig. 5.

A supply main carrying steam at 20 or 30 pounds pressure is carried along the main corridor with a branch to each building. Here the pressure is reduced to about 2 pounds for heating purposes and a connection with the higher pressure left for use in cooking, sterilizing, etc.

The general piping layout for a typical building is shown in Fig. 6. The condensation from the heating system is discharged through a water-line trap to a main return in the corridor, leading back to a vented receiver in the boiler room. The water-line trap serves to seal the returns and thus ensures quietness of action, which is very essential in this class of buildings.

The principle of the water-line trap is the same as the pump and receiver outfit shown in Fig. 4, except the water simply flows through it, due the higher steam pressure back of it, instead of being pumped. While special water-line traps are manufactured, any good float trap may be used for this purpose by making a new inlet opening with the bottom and connecting an equalizing pipe with the usual inlet opening in the top.

In operation, the water in the return system rises in the trap, until it raises the float and opens the discharge valve, allowing the water to pass through into the main return leading to the receiver.

The elevated trap not only performs its usual function of discharging water from a higher to a lower pressure without the passage of steam but also acts as a dam in the return pipe and floods that portion back of it. The usual connections for a trap used in this manner are shown in diagram in Fig. 7. This same arrangement is sometimes used in low-pressure gravity return systems, where steam at boiler pressure is carried in the heating system and where the boiler is located at a lower level than the main basement. Under ordinary conditions the return mains running near the floor would be "dry" and there would be danger of water hammer, unless siphon loops were used on the various drops connecting with the horizontal main. By using a water-line trap in the main return a "false" water seal, so called, is formed, al-

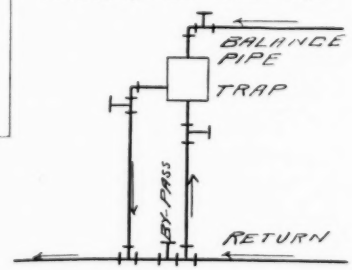


Fig. 7.

though the pressure upon both sides of the trap is equal. In this case the device serves simply as a dam for flooding the pipes back of it and not as a trap.

Going back still farther from the boiler let us consider some of the points to be looked out for in the piping arrangements to prevent "air pocketing," "short circuiting," etc., which tend to hold back the condensation in the return pipes and cause insufficient heating, water-hammer, etc. Steam will flow wherever there is a passage and a lower pressure, but cannot enter pipes and radiators, which are filled with air or water. Air may be trapped in a heating system either by a wrong location of the air valves, or by short-circuiting of the steam in such a way as to prevent the air from reaching the valve. This may operate in two ways as follows: The steam may reach the return end of the radiator or coil by a short cut in the piping and hold back the air by a slightly higher pressure at this point, or, when automatic air valves are used, the steam backing into the return end reaches the valve and closes it before all of the air has been expelled and thus pockets a certain amount, which prevents the radiator from being entirely filled with steam and so renders a portion of it useless. This condition most frequently occurs in the two-pipe system of connection, where the interval between opening both the supply and return valve is so short that steam rushes in at both ends simultaneously and pockets a quantity of air at the center of the coil or radiator. This can be avoided in the case of hand-controlled radiators by first opening the supply valve and allowing the radiator to become filled with steam before the return valve is opened. When automatic control is employed, both valves necessarily open at the same time, and air will be pocketed, unless some arrangement is provided for preventing steam ever reaching the return end except through the supply valve. This is easily accomplished in practice by sealing the return from each coil, as indicated in Fig. 8, where each drop is brought down separately and connected with the horizontal main below the water line. The air valve may be placed either in the return header of the coil or in the return drop just below the basement ceiling. In the latter case it should be connected into the top of a short length of vertical pipe connected in turn by an elbow and tee with the drop pipe. This is to form an air-separating chamber in order to prevent water from being drawn into the valve with the air when discharging. Even with this arrangement it is best to connect the valve with a drop line, when it occurs in a finished room.

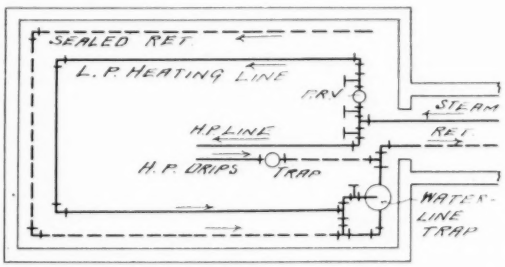


Fig. 6.

Check valves are palced in the returns below the water line to prevent the water from backing into the coils in case, through carelessness, the return valve should be opened first, or with a pneumatic system, if the supply valve should fail to open from any cause.

Another case more or less familiar, and one that has been touched upon by the writer in other articles in "Domestic Engineering," is illustrated in Fig. 9. This is of such common occurrence and capable of causing so much trouble in systems having dry returns that it seems best to mention it in the present connection. In the cut the full lines represent the way a system of this kind is often installed, and the dotted lines the additions necessary to make it work properly. Without the loops the slightly higher pressure in the first return connections, nearest the boiler, will tend to hold back the condensation in the horizontal main, which has entered it through return connections farther along the line. By introducing the siphon loops (shown dotted), the nearer returns are sealed, and any difference in pressure is balanced by the difference in height of the water columns in the legs of the loop.

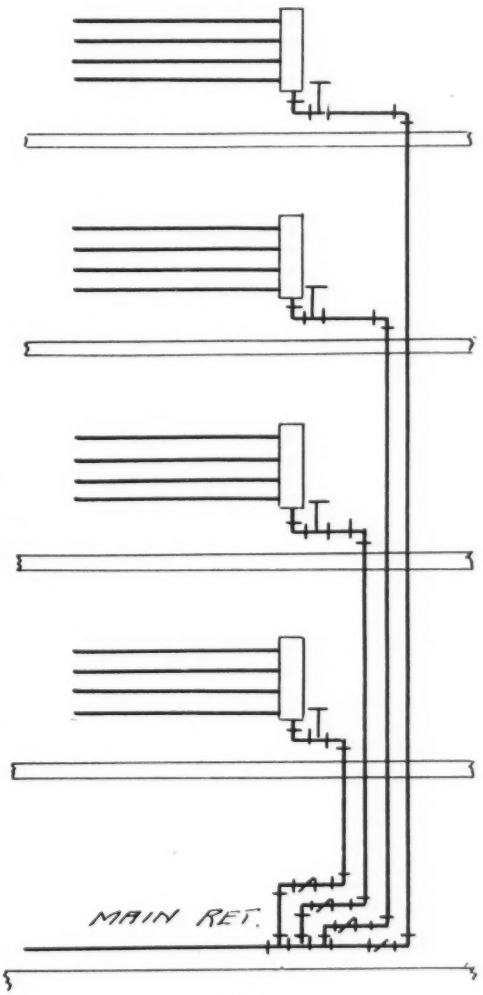


Fig. 8.

Returns near the end of the line, and the drip connection in the supply main, need not be sealed, because the pressure at this point will be nearly uniform, and steam pressure must be admitted at the extreme end of the line to force condensation back to the boiler or receiving tank. Frequently a heating system contains both sealed and overhead returns, the mains being run at the flow below the water line, while various branches leading into this are most conveniently carried overhead, owing to doorways, equipment of different kinds, etc. While this arrangement will work out well, when properly planned, great care

should be taken to join only those together, above the water level, which are sure to contain the same pressure. If there is any doubt it is best to carry them separately to the sealed main. If this is not convenient in any particular case, those suspected of having a slightly higher pressure should be furnished with a short loop, 24 or 30 inches in depth, thus equalizing the pressure before being brought together. The older method of introducing check valves

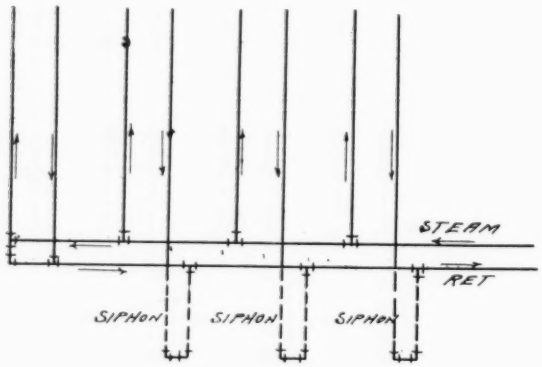


Fig. 9.

into dry returns, for preventing higher pressure from backing from one pipe into another, simply makes a bad matter worse, as it adds the friction of the check to the higher steam pressure and results in holding back the condensation all the more effectively. Furthermore, check valves are practically never steam or air tight, after being used for a short time, and are only useful in preventing sudden rushes of steam or water, because the pressure will equalize on the two sides of a valve of this kind after a certain interval of time, when subjected to a continuous pressure. When placed in a horizontal offset of a vertical pipe, below the water level, they offer less resistance, and the water tends also to seal them against leakage. The use of a check under any condition is simply to retard the flow of steam or water in the wrong direction for the time being and not to serve as an automatic shut-off valve for any length of time. They may sometimes be used to advantage where there is likely to be a sudden reversal of pressure in a certain pipe perhaps, when steam is first turned into the system but which is equalized after an equilibrium has been established. When it is desirable to have the water pass through a check with as little resistance as posisble, the check may be turned partially upon its side. This reduces the force necessary to raise the clapper. When it is desired to reduce the resistance to a minimum, a clapper of aluminum may be substituted for the usual one of bronze.

An important detail in connection with the return of condensation by gravity is the size of piping and grading. Pipe sizes should be ample, wherever there is any possible doubt as to the successful operation of any particular branch or section. When possible arrange piping so that the steam and water will normally flow in the same direction. If for any reason this cannot well be done, make the pipe especially large and give it a good downward pitch in the direction, which the water has to flow. A pitch of 1 inch in 10 feet is usually enough in the case of most dry returns, but in some instances it may be necessary to double this for short lengths of pipe.

Only condensation from exhaust steam should never be returned to the boilers without first being purified, as it causes scale and foaming. This is best cared for by placing an oil separator in the branch leading to the heating system. The efficiency of a device of this kind depends largely upon the velocity of the steam, in passing through it and the method, in which it is connected into the system of piping. For this reason the conditions of the problem, such as weight of steam per hour, etc., together with a sketch of the piping should be submitted to the manufacturer, when ordering a separator. The size of the exhaust pipe does not by any means always indicate the size of separator required.

Usually a properly designed and proportioned separator will remove the oil so that the condensation may be returned to the boilers without any bad effects. In case a small amount is left, it may be removed by passing the condensation through a filter of coke or shavings or by using a separating tank of the general form shown in Fig. 10. This is usually constructed of boiler iron, divided into three or four compartments, which do not extend quite to the bottom, or through which one or two holes are cut near the lower edge.

In operation the condensation enters compartment 1, where most of the oil rises to the surface. The water flows from 1 to 2 through the lower opening, and any small amount of oil, which is carried through, will rise to the surface in 2. Clear water passes from 2 to 3 and 4,

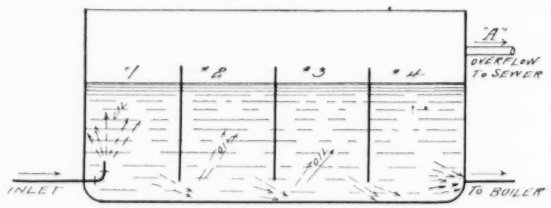


Fig. 10.

as indicated, and from the latter compartment it enters the pump suction. The degree of purification may be carried still further, if necessary, by increasing the number of compartments.

When sufficient oil has gathered on the surface of the water, the feed pump is stopped and the water level allowed to rise to the overflow "A," where it flows off into the sewer. As soon as the surface is cleared of oil, the pump is started again, and the water in the tank brought down to its normal level.

After the War.

When the war is over, no excuse will go.

Either you were in it or you were not.

Either you shouldered your gun, served in the trenches or the navy, or the Young Men's Christian Association, the Red Cross or in some place where the door was opened, or else you did nothing.

If you could not serve, you could send your boys with a godspeed, as they marched out to the front. To hold them back stamped them as slackers.

Either you strained your resources to buy Liberty Bonds, or you forgot your obligation to those who fought and died for your flag.

Disqualification for active service is no justification for forgetting the boys behind the gun who sacrificed all thought of gain and were willing to sacrifice their lives at their country's call.

The war will be fought to the bitter end. The Hun will be crushed. Peace will come. The flag will fly and freedom will win. If you do your part, however small, you will share in the glory. If you fail to do your little bit, nothing but remorse will be in store for you.—"Leslie's."

LIFT *and* FORCE PUMPS

Notes on the Construction and Operation of Pumps With Steady Flow and High Efficiency

By John H. Perry

IN a former article on "Lift and Force Pumps," which related principally to the operation of single acting force pumps, we said they were called "single acting" because they have only one piston, and discharge water only when the piston travels in one direction. Such pumps do not discharge water while piston is traveling in the opposite direction.

In this article we propose to show at least one of the ways in which pump manufacturers overcome the intermittent action of the single acting pump.

They do it primarily by securing a steady, easy, uniform flow of water through the pump, and through its suction and delivery pipes, from the time the pump is started to the time it stops. If it is a piston pump, the piston moves forward and backward, reversing its motion many times in a minute, but the flow of water through the pipes is not reversed, not even slowed down during either the forward or backward strokes. In the piston type of pump this is accomplished by an ingenious arrangement of valves and sometimes also by a plurality of pistons.

When a pump is built so that its piston pushes water into the discharge pipe during both its forward and backward strokes, it is called a double action pump. Many such pumps are on the market. Plumbers and fitters are installing them somewhere every day.

The fundamental principle underlying the design and

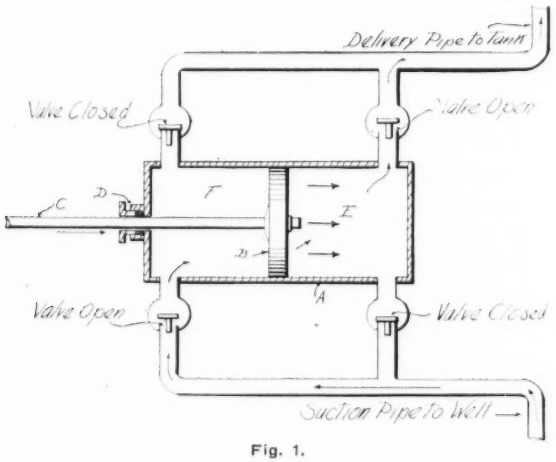


Fig. 1.

construction of double action pumps, as a class, is illustrated in Fig. 1.

The pump proper is composed of a single cylinder, A, having a close fitting solid piston, B, inside. The piston is pushed forward and back in the cylinder by an external force applied to rod C, which passes through end head of cylinder and is made water tight around rod by a stuffing box at D. Four valves are used in connection with this piston and cylinder. Two of them communicate with chamber E, and two with chamber F.

The two lower check valves open inward toward these chambers, and consequently are connected to the suction pipe. They are the inlets to the pump. They allow water

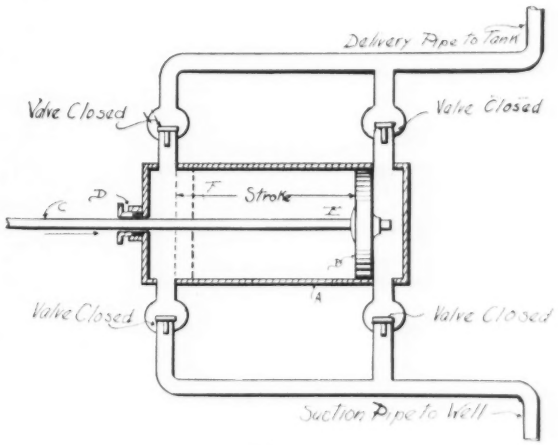


Fig. 2.

to get into the pump barrel, or cylinder, A, but prevent it from getting out that way.

On the other hand, the upper check valves open outward from the chambers E and F. They allow water to leave the pump cylinder through them, but prevent the water from falling back into the cylinder. These outlet valves, therefore, are connected to the delivery pipe, which in this case we will assume goes to a tank somewhere, perhaps to an open tank in the attic or to a pneumatic pressure tank alongside or near the pump. Anyhow, there is a back pressure of water in the delivery pipe which will close the upper valves.

The operation of this pump is as follows: A pushing force applied to rod C will push the piston back into chamber E. The water in E is thereby subjected to a pressure which closes the lower valve, and forces open the upper valve of chamber E, as shown in the illustration. The water contained in E is, therefore, pushed up into the delivery pipe.

While piston is traveling into chamber E it is also traveling from chamber F. This motion makes the capacity of chamber E smaller and increases the capacity of chamber F. In fact, the upper valve of chamber F being closed the tendency is to form a vacuum in chamber F. But the atmospheric pressure on the water in the well pushes water up the suction pipe and fills chamber F through its lower valve. Thus while piston in Fig. 1 is traveling

from left to right, the chamber F is being filled with water from the well, while chamber E is discharging its contents into the delivery pipe.

In the same way chamber E becomes filled from the well, and chamber F discharges its contents into the delivery pipe, when the piston travels from right to left, due to a pulling force being applied to the piston rod.

Now you understand perfectly the operation of the double action pump. In your practical experience you will find that different manufacturers apply the principles in different ways. You may find that all the valves are bunched together on top of pump, or at underside of cylinder, or perhaps somewhere else, instead of where shown in Fig. 1, but study them, and you will find that

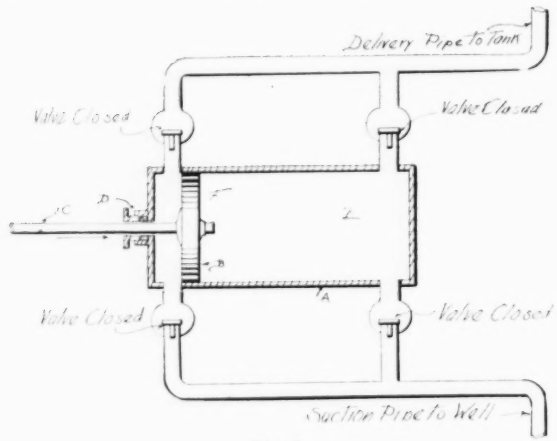


Fig. 3.

when boiled down to fundamental principles, they are very similar to Fig. 1.

Fig. 2 shows the piston pushed into the cylinder the full length of its stroke. It is on the point of reversing its motion, and for an instant it is at rest. During this instant the valves may all be closed as shown, and no water is passing through the pump. This is theory. In practice, however, we find that the momentum of the water keeps up the flow during this very brief interval of inaction of piston. The momentum of the flowing water in the pipe lines is very much like that of a heavy fly wheel, which carries engine over the "dead-center" and steadies up the speed of the engine.

Fig. 3 shows the position of the piston at the other end of the stroke, that is, when piston is pulled out as far as it will go. The length of the stroke is distinctly shown in Fig. 2. This distance, multiplied by the sectional area of the cylinder, gives the amount of water displaced by each stroke of the piston.

A full knowledge of this kind of pump is so essential to plumbers and fitters that we consider it advisable to go a little way into pump mathematics. We think the trade should know how to figure the capacity of a pump of this kind, and the power required to work such a pump. Knowing this and a few other things, they are able to order pumps with accuracy, or figure the power and capacity of any similar pump in service.

Suppose a contractor has a job, where he requires a pump of this kind. Suppose that 50 people have to be supplied with 30 gallons of water every 24 hours. Suppose that the tank will hold a full day's supply. And suppose that the pump is the only means of filling the tank.

Suppose, also, that the diameter of piston is 3 inches, its travel is 10 inches, and it can make 100 strokes per minute. The *strokes per minute* mean the number of times the piston travels the 10 inches referred to in a minute. It does not matter whether the piston is going one way or the other, a full travel of 10 inches either way is a stroke in this kind of a pump.

Now let us see how long it will take such a pump to fill the tank. The capacity of tank is 50 people × 30 gallons per day=1,500 gallons. One U. S. gallon equals 231 cubic inches. Capacity of tank therefore equals 1,500 × 231 or 346,500 cubic inches.

Capacity of displacement in pump chamber due to one full stroke of piston equals length of stroke in inches multiplied by area of piston in square inches, or 10×7.07= 70.7 inches. Call it 70 cubic inches.

But the pump makes 100 strokes per minute, therefore the maximum delivery of pump per minute=70×100= 7,000 cubic inches. Now divide the capacity of tank by the capacity of pump, and the quotient will be the time required to fill the tank, theoretically, thus:

$$\frac{346{,}500}{7{,}000} = 49.5, \text{ or practically 50 minutes.}$$

This, however, is theoretical. The pump will fill the tank in 50 minutes at that rate, if all valves work 100 per cent perfect, and the piston is 100 per cent tight.

But in practice we find that there is a certain leakage around the piston whereby water can "slip through" from one side of the piston to the other. This is very slight, if any, when pump is new, but it grows with wear and tear of piston and cylinder lining.

Then, again, there may be some back-flow of water at valves as they close. And possibly the valves may leak a little. We think it would be fair to allow say 5 per cent slip at piston, valves, etc., when pump is new, and perhaps 10 per cent when pump reaches the stage where it should be repaired. Let us be generous here. Generosity in allowing for a factor of safety is good engineering.

Figuring this way we would add 10 per cent or 5 per cent to the theoretical and say that the tank can be filled in 55 minutes if pump is in good condition.

A contractor giving an estimate on this to an owner could say "the pump will fill the tank in one hour" and guarantee it.

"But what about the power to work such a pump?" you may ask.

Well, that is a separate question. It depends upon conditions and the kind of power available.

Suppose the condition is similar to that shown in Fig. 4 and an electric-driven pump is to be used.

In this illustration we have a two-story and basement building with a well outside and an open tank in attic of building. The pump and motor are set in the basement. The pump draws water from the well by a suction pipe run underground. It delivers water into attic tank through a delivery pipe, which also acts as a supply to house direct. To permit this dual service a check valve is necessary between pump and the lowest branch taken of delivery pipe or tank supply pipe, as it may be called.

To determine the power required to lift water from this well to tank at the rate and under the prescribed conditions of the aforesaid case, namely, 1,500 gallons per hour, we may figure as follows:

The weight of water to be lifted per hour equals 1,500 gallons × 8.5 lb.=12,450 pounds. This water has to be raised about 40 feet. Therefore, 12,450 pounds × 40 feet = 498,000, or, say, 500,000 foot pounds.

That is the theoretical power. No allowance has been

made for friction, etc. Suppose we add 20 per cent for friction, then the total work to be done is 500,000 + 20 per cent, or 600,000 foot pounds per hour, or 10,000 foot pounds per minute.

A horse power is 33,000 foot pounds, therefore it is evident that about one-third of a horse power is required to pump 1,500 gallons of water from the well to the tank shown in Fig. 4.

A conservative contractor might order a pump having a ½ h. p. motor for this job, the idea being that a few dollars spent on a motor a little larger than is actually necessary is a good investment for the owner. Of course, many motors can be run on an overload for a considerable time, and as this motor will have lots of time to fill the tank, even if it exceeds the specified hour, a smaller motor can be used, and the speed of the pump reduced.

By reducing the speed of pump through pulleys, or gearing, the power required to pump the water will be less. But the time required to pump the water will be longer.

It is generally conceded to be a good plan for plumbing and heating contractors to be guided largely by the pump manufacturers when selecting pumping apparatus. The manufacturers, as a rule, know what their pumps and motors will do under varying conditions. They know how much larger than theoretical the apparatus should be to perform different duties under different working conditions.

On the ordinary run of work it does not matter how finely a contractor may figure down his motor and pump. He should be guided to a great extent by the manufacturers or their agents, who have had considerable practical

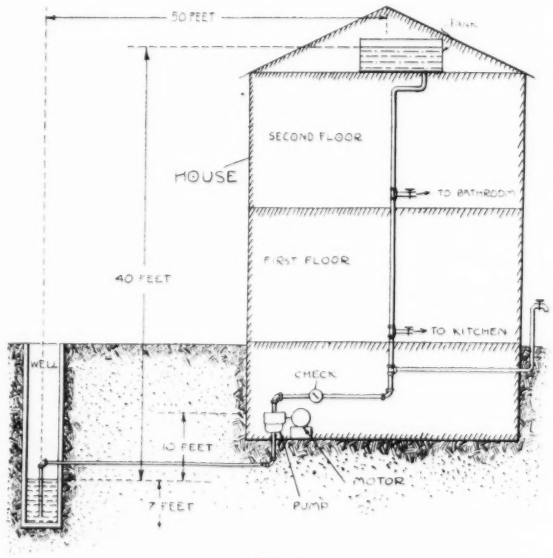


Fig. 4.

experience with their own specific equipments. In fact, they are specialists and their advice should be heeded.

Before closing let us take another example of pumping equipment and figure up the theoretical power required to do the work. Let us look into Fig. 5.

Here we have a pneumatic tank system in the same building and hooked up to the same well as shown in Fig. 4.

A double-acting pump is belted to an electric motor which is controlled by an automatic switch. The tank is of the pneumatic type, being held about two-thirds full of water all the time. The top third of tank capacity is compressed air having a pressure of whatever is best suited to the job.

The suction pipe connects the pump to the well. The pump discharge pipe connects to bottom of tank. And from bottom tank a cold water distributing pipe is run to the building and grounds. You know the kind of a system we have in mind.

When the pressure in tank falls, say 5 or 10 pounds,

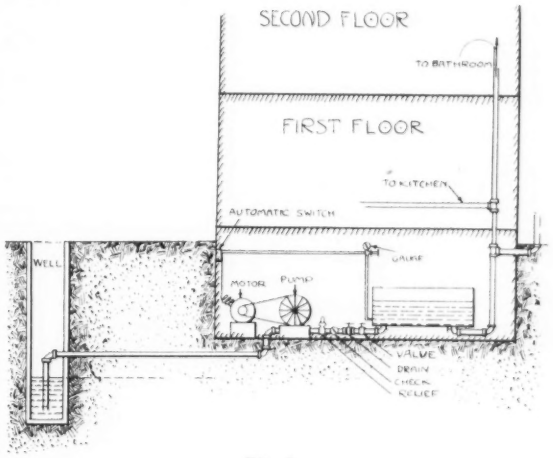


Fig. 5.

the switch automatically throws in and starts the pump. This refills the tank, compressing the air more and more as the tank fills up, until the said 5 or 10 pounds pressure is made up again in the tank. Then the switch automatically throws off and stops the pump, a check valve at A acting to prevent tank water from returning to pump.

Suppose that it is desired to hold up a pressure of, say, 50 pounds per square inch in the tank, and that the pump and motor shall be capable of furnishing, say, 25 gallons of water per minute to the tank against that pressure; what is the theoretical power required to do this?

It may be figured as follows:

Weight of water to be lifted per minute equals 207.5 pounds. The back pressure against pump is equal to a hydraulic head of about 100 feet. It is really a little more, but call it 100 feet in round numbers.

The work to be done, therefore, is about 207.5 × 100 = 20,750, or say 21,000 foot pounds.

Suppose now that 25 per cent is added for friction, etc., at pump and piping, then the total power, which motor must transmit to pump per minute, is about 26,000 foot pounds, which is a little over two-thirds of a horse power.

Of course, the motor should be larger than that. It should have a surplus of power, or margin of safety. Possibly a specialist in that business might recommend the use of a one h. p. motor, although it would appear that a ¾ h. p. motor should do the work fairly well.

Planning Their Vacation.

Perhaps Emperor Charles and his wife are quarreling about where they shall go on their long vacation.—"Kansas City Star."

Are you grateful that 2,000,000 of our boys, enlisted in our army and navy, are giving us security at home? If you are, turn your gratitude into War Savings Stamps.

METHODS *of* PROMOTING TRADE EXTENSION *in the* LUMBER INDUSTRY

A National Movement of Interest to the Plumbing and Heating Industries —It Was Inaugurated in 1916 by the National Lumber Manufacturers Association, and Dedicated to Co-operating With Retailers in Building Defense Works to Protect and Maintain the Essential Lumber Market

"WHAT are other organizations in the building trades doing to promote trade extension? What methods are being pursued? Do any of these methods parallel the constructive program of the Trade Extension Committee created by the allied associations in the plumbing and heating industry?"

Plumbing and heating contractors and supply men, who have entered enthusiastically into the campaign of Building Bigger Business, as outlined by the Trade Extension Committee, have no doubt asked themselves these questions.

In order to ascertain what other associations are doing along lines kindred to those followed by the committee, various secretaries in the organized building industry in Chicago were recently interviewed.

In the brick, cement and electrical industries no elaborate or definite trade extension campaign is in evidence. Promotional work is, of course, proceeding as in the past, with some modifications and guided by the all-pervading spirit of co-operation with the Government in the war program.

In the lumber field, however, a systematic trade extension campaign, similar in some phases to that inaugurated by the allied associations in the plumbing and heating industry, was begun as early as 1916 by the National Lumber Manufacturers' Association, Chicago, which is composed of thirteen state organizations in that industry. It seems that officials of the organization, as well as other leaders in the industry, sensed the future status of building operations, and to meet adverse conditions, efforts were made to co-ordinate the lumber interests on the basis of co-operation, and the trade extension movement was launched with the idea of close co-operation between manufacturer and retailer.

That the two must work together, as well as get-together, was pertinently illustrated by E. A. Sterling, a prominent lumber expert, when he said in an address before a meeting of lumber manufacturers in 1916: "The fact of the matter is that the lumber manufacturer's and the lumber retailer's chestnuts are on the same hot stove. They are all going to burn up, unless both get busy and rake them off into a cooler corner."

A similar condition prevailed in the plumbing and heating industry. The retailer's and the wholesaler's chestnuts were resting on the same hot stove and the tendency to "slumber" was becoming more acute, until it became clearly evident that the combined action of contractor, manufacturer and jobber, became essential in order to stimulate the sales on which the livelihood and prosperity of all and each depends.

Co-operation and organization were the dominant aims which inspired the creation of the Trade Extension Committee in the plumbing and heating trades. This was similarly true of the trade extension movement in the lumber industry.

"In any or all of the work, which the local dealers may do to further their own interests and their local trade," said H. R. Isherwood, of the Trade Extension Department of the National Lumber Manufacturers' Association, "the national organization, through its trade extension work, will give all possible help and assistance. It will co-operate by furnishing information, speakers, designs, plans, literature, advertising copy or anything which will promote the use of lumber. It asks nothing in return, except that the dealers do their proper share in making their communities substitute-proof, and to maintain the use of wood wherever it is economical, safe, or by treatment to prevent decay or retard fire, can be made equal or superior to other materials. Without co-operation between the dealer and the manufacturer, progress will be slow. With it the lumber trade can be made to hold its own, and gain strength and momentum by presenting a united front, and systematically and energetically promoting the use of forest products. The manufacturers are eager to co-operate with the retailers in trade balance during the war and in recovering all business losses after the conflict. The retailers, who are on the firing line every day, can be of great assistance to the manufacturers and themselves, if they will enter whole-hearted in the trade extension movement, offering friendly criticism, giving suggestions and reporting progress and conditions in their communities. This is a day of organization and co-operation in all lines of business. None of us succeed, who live and work to ourselves, or refuse to work with or co-operate with our neighbor and competitor. The best interests of the consumer and public who buy your goods are served by co-operation and organization."

Methods of Lumber Trade Extension.

Among the methods employed by the Trade Extension Department of the National Lumber Manufacturers' Association are educational publicity through Better Building booklets and opportunity bulletins for retailers, and traveling speakers, who address meetings of retailers in different parts of the country. In other words, a kind of speakers' bureau is maintained for promotional work, a policy which has been popular in the Portland Cement Association, which maintains 150 men on the road to teach the proper use of its product.

The booklets, which are attractively printed, with drawings and specifications, are all numbered. For instance, Booklet No. 1, treats upon private garage construction. Booklet No. 2 covers farm house construction—how to build the new and improve the old. Booklet No. 7 takes up the question of dairy and general purpose barns, and

discusses site and location, general shape, light and ventilation, floors, stalls, feed alleys, etc.

Retailer's Service Department.

The retail service department idea is strongly emphasized in the trade extention literature of the lumber manufacturers. Retailers are urged to set aside space in their offices for a service room, where the public and prospects can enter at any time. Many lumber retailers have adopted this suggestion, which is equally applicable and valuable to the wide-awake plumbing and heating contractor, who could install a service department in conjunction with his show room. The typical service department in the retail lumber trade, includes samples of wood used in building, plan books and pictures, and a kind of reference library of catalogues, better building booklets, opportunity bulletins and an ample supply of pamphlets on materials and building. Tables and chairs for visitors' use are, of course, included in the service room.

In pointing out the value of a service department in the retail lumberman's place of business, Mr. Isherwood in his trade extension literature says: "It will extend your trade and make you a recognized authority and leader in your community. It will bring new customers, who wish to profit by your advice. If they accept your help, they will buy your materials to supply their needs.

"A service department in your office will be talked about and favorably commented upon. It will furnish a basis for news items in your local papers and give you publicity. Don't talk service. Give it by establishing a service room or department in your office, where customers can secure information"

A Corner of a Lumber Service Department, Showing Samples of Building Materials and Literature.—A Suggestion for Plumbing and Heating Contractors.

Service Room for Plumbers and Fitters.

If the service room were a recognized factor in the store or show room of every plumbing and heating contractor there is no doubt that its effectiveness as a bigger business builder would be fully demonstrated. There are relatively few contractors who have service rooms which approach the up-to-date caliber of those which many retailers in the lumber trade have introduced for promotional work.

Complete plans and suggestions for establishing service rooms are furnished to the lumber retailer by the Trade Extension Committee of the National Lumber Manufacturers' Association.

A service room in a plumbing and heating establishment, with reference trade literature, in a corner of the show room, would place the prospect or property owner seeking information in a position to gain new ideas in more definite form. It would create in him new desires, while the contractor is absent or busy. Then when the plumber or fitter is ready to see the prospect, the ideas, which the latter has gained from the service department, will enable the contractor to make a sale easier, quicker and more satisfactorily.

Building Bigger Merchants.

Making the lumber retailer a better merchant and business man is the fundamental purpose of trade extension activity among lumber manufacturers. The same statement is applicable to the trade extension work in the plumbing and heating industry. Since the inception of the trade extension campaign in the lumber field, over two years ago, a remarkable awakening in better retail selling methods has been apparent.

Special Promotional Campaigns.

If the lumber merchants in a given city are desirous of stimulating bigger business, either in essential building operations or the remodeling of homes, the Trade Extension Department of the organization representing the lumber manufacturers is prepared to co-operate in staging a lumber show, which will attract public attention and newspaper comment. In Grand Rapids, Mich., a show of this kind was successfully "put over" by the Grand Rapids Lumber Merchants, assisted by the manufacturers, who furnished the many interesting materials for the exhibit. In other cities, promotional campaigns have developed to proportions, which took in not only the lumber merchants, but dealers in other lines. Last April, for instance, an "Own Your Own Home" campaign was put on in a western city. Local business men—such as furniture dealers, painting and decorating contractors, plumbers and fitters, hardware merchants, electrical dealers, cement contractors, etc.—were invited by trade extension representatives to participate in the lumber show. The furniture dealers were dubious at first, and were unable to see what advantage they would gain by linking up with the lumber merchants. Then it was explained that unless a demand is created for building or remodeling, there cannot be a demand for furniture to adorn the completed dwelling. It was shown further that the dealer in linens for tables and beds could not sell his goods, unless the furniture man could find a market for his furniture. There must first be a house, in which to place these things. The same argument was applicable to the plumber and fitter, the painter and decorator, the electrical dealer and so on down the line. The different local business men, who would naturally derive more profit as the result of additional home building or remodeling, were shown that their participation in the lumber show would be to their interest. Five plumbing contractors joined in the "Own Your Own Home" exhibit, each one furnishing his quota of sanitary goods for the arrangement of an attractive bathroom exhibit, in one corner of the hall. These master plumbers had the opportunity of observing a practical demonstration in co-operation, and they realized that if the local business men, whose interests are more or less allied, can be brought together in promotional campaigns of this character, the benefits that are attained will be mutual. In these cam-

paigns, the support and co-operation of the local Chamber of Commerce and business organizations were enlisted by the lumber merchants.

The "Why" and Wherefore."

If trade extension effort, along organized and systematic lines, is worth while during the war period, its permanent continuance after the war is also advantageous, according to the attitude taken by the lumber industry. Organized for defensive purposes, it will be maintained for offensive effort—to extend the demand for wood products in home construction. The Trade Extension Department was thus established for definite reasons based upon self-preservation, reasons which are kindred to those which gave birth to the Trade Extension Committee in the plumbing and heating industry. The "why" and "wherefore" of the establishment of trade extension in the lumber field are tersely covered in nine paragraphs which might be considered in the nature of resolutions, and they will no doubt prove of interest to the plumbing and heating industry. They follow herewith:

"First: That the dealer consider himself a lumberman first, last and all the time, because he knows this business best, has been in it longest, has most of his money invested in it, and in it lies his greatest opportunities for profit.

"Second: That under the pressure of competition of other materials, lumber must be advertised and talked about in order to keep the consumer interested and make him a buyer.

"Third: That lumber advertising be carried in the local papers, and that the National Lumber Manufacturers' Association, as well as several of the retail associations, will gladly give assistance and service in preparing advertising copy, and directing local advertising campaigns.

"Fourth: That the local newspapers be furnished with news copy regarding the lumber trade, giving greatest prominence to local matters, supplemented by such national news as will be of interest.

"Fifth: That a closer basis of co-operation be established between the lumber dealers and those who specify or use the material; in other words, that the acquaintance of the local architects, engineers, contractors and others be cultivated systematically.

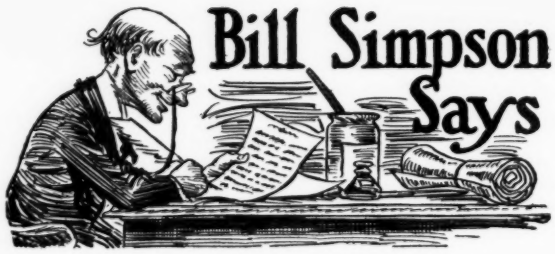
"Sixth: That every local dealer constitute himself a committee of one to watch for unfavorable developments or agitation against wood, and take definite and prompt action locally, and report the situation to the Trade Extension Department of the National Lumber Manufacturers 'Association.

"Seventh: That the question of the industrial importance of the lumber trade, the availability of good structural timbers, comparatively low cost of lumber, as compared with other building materials, and the community development idea be vigorously prosecuted in the 'home town.'

"Eighth: That city groups of lumber dealers organize for the specific purpose of promoting the use of lumber, such organizations to handle all matters of publicity, advertising, etc., which are of mutual interest.

"Ninth: That the individual dealer give service to customers, assist home builders and others in the proper selection of materials, furnish designs and plans, and keep in touch with prospective builders in order to influence their decision in favor of wood construction, and to assist them in procuring material, which will make an economical and serviceable structure."

Now is the time to buy War Savings Stamps.



(With Apologies to K. C. B.)

Did you read about
* * *
Sergeant Brown of the
* * *
U. S. National Army?
* * *
He's from our town,
* * *
And he's one of those
* * *
American boys that the
* * *
Kaiser has been joking about,
* * *
And telling his folks
* * *
That they can't fight.
* * *
Well young Brown,
* * *
Who is just past 22,
* * *
Went out the other morning
* * *
And single-handed captured
* * *
One-hundred and fifty-nine
* * *
German soldiers, including
* * *
Four commissioned officers.
* * *
And what's more, he brought
* * *
Every one of them back over
* * *
A ten-mile hike and
* * *
Turned them into Headquarters.
* * *
I guess that's doing pretty
* * *
Well for a fellow that,
* * *
Kaiser Bill says, can't fight.
* * *
But the point is this:
* * *
Those of us here at home
* * *
Must put the same pep and
* * *
Punch in our daily jobs
* * *
That Brown does in his.
* * *
Brown might have come back
* * *
With one prisoner—
* * *
But he wasn't satisfied
* * *
With less than 159.
* * *
Some of us seem to be
* * *
Willing to take one job
* * *
When we might get a dozen.
* * *
It's all a question of
* * *
Determination and grit.
* * *
Get busy—and hustle.
* * *
Remember Sergeant Brown!

LEGAL QUESTIONNAIRE

*Am I Liable in Damages Because I am Unable to Fulfill My Contract on Account of War Regulations as to Labor and Shipments by Federal Government? This Question Is Here Answered in a Most Careful Manner**

By "The Judge"

Liability of Contractor Who Cannot Perform His Contract Because of War Regulation as to Labor and Shipments by Federal Government.

Editor "Domestic Engineering":—Recent Federal Government regulations regarding shipment of materials without priority orders has raised a question in my mind as to where I am going to get off, in the matter of a plumbing and steamfitting contract, which I have with the owner of a private dwelling. It looks now as if I could not get some of my materials to start the work even. Am I liable in damages under my contract because I cannot perform the contract?

F. D. J.

Before discussing the interesting question, which you have raised, I want to suggest that it is imperative, if you want to escape the annoyance of claims similar to that which will be made in the case you mention, to insert in your bid or proposal and your contracts some stipulation which will relieve you of liability, if the Federal Government or the State Government issues orders or passes laws which make it impossible for you to perform your contracts.

The two following forms are suggested as meeting the requirements of situations which might arise under existing conditions:

For Use in Proposals or Bids.

This proposal and price is made subject to Acts, Demands and Regulations of the United States Government or of any State. We will not be responsible for delivery of material or execution of this work in case of such Acts, Demands or Regulations.

For Use in Contracts.

This contract is made subject to Acts, Demands and Regulations of the United States Government or of any State and we will not be responsible for delivery of material or execution of this work in case of such Acts, Demands or Regulations.

These provisions, or what might be better termed conditions, should be inserted in every proposal or contract. Some people, who like to use rubber stamps, might suggest a rubber stamp with the above wording on it could be used. Personally, knowing the uncertainty of proof in court, I believe that the condition above stated should be inserted in the body of all proposals and contracts, so that there may be no question about their being a part of the transaction. As you will see, later, it might be that you would have a perfectly good defense, even if you left these conditions out of your proposal and contract, but if they are inserted, it makes a stronger case for you at the very start. An opponent may stop and think before butting against a stone wall, while he might take a chance, if the going were a little softer.

Although there are exceptions to the general rule, among them interference by some governmental law or action, the prevailing rule is that impossibility of performance, arising after a contract has been made, does not excuse a man from liability for not performing his contract.

There are two kinds of impossible contracts. One is the kind of contract which it is impossible to perform from the very nature of the thing contracted for. This impossibility must be apparent on the face of the situation to make the contractor not liable. The other kind of an impossible contract is the one where the thing contracted for is impossible to perform as a matter of fact, but is not inherently impossible of performance. For instance, a contract to go to London from New York in a day, would be void as being impossible, while a covenant that it will rain tomorrow would be valid, as it is possible that it might rain. It is with the latter class of contracts that we have to deal here, the contract which was possible when it was made, but which has become impossible because of developments.

When, at the time of the making of the contract, the fact that it was impossible to perform it was known to all parties, there has been no valid contract which can be enforced, for in the eyes of the law there has been no valid consideration. Where parties make an agreement and are ignorant at the time that it cannot be performed, there has been no valid contract, if it appears, in the construction of the agreement, that it was intended to be conditional upon the supposed possibility of performance. There has been such a mistake here that renders the agreement void and of no effect. But if it appears that there was an absolutely unconditional agreement, not showing any intention that the possibility of performance was an implied condition, the parties will be bound by the contract.

If one of the parties to the contract knew at the time it was made, that he could not perform it, but the other party was ignorant of the fact, the other party can claim damages; as where one man promises to pay a claim, when he has settled a suit which he has brought, but as a matter of fact he had never brought the suit. The other man has a valid claim against him.

The kind of cases which give rise to the greatest trouble are those in which the impossibility of performance does not come into existence until after the contract is made, and the general rule is that the promisor is bound

*Every Effort is made to the End that these Answers may be authoritative. However, we cannot assume any Responsibility because of the very Nature of the Service, which is rendered without a personal Interview.—Editor.

in such cases, although some states have relieved this situation by statute.

An impossibility, due merely to the fact of a foreign war, has been held not to relieve the parties from their contract.

An exception to the general rule, stated in the second paragraph above, is recognized in some of our later cases, where the event that creates the impossibility is one which cannot reasonably be supposed to have been within the contemplation of the parties. In such a case general words in the contract will not impose an absolute liability to perform or to answer in damages, although such words are broad enough to include the contingency which has arisen.

Acts of God, such as flood, fire and lightning, which render a contract impossible of performance, do not, as a general rule, relieve a man from liability in damages, if he cannot carry out his agreement. The subject matter might be destroyed or a man might die, but he or his estate may not be relieved of liability. There is an exception to this general rule, however, in the case where the contract relates to the use or possession or any dealings with specific things in which the performance necessarily depends on the existence of the particular thing, and the condition is implied by law that the impossibility arising from the destruction of the thing, without fault in the party, shall excuse the performance, because from the very nature of the contract it is apparent that the parties contracted on the basis of the continued existence of the subject of the contract.

One of the clean-cut exceptions to the general rule, that an impossibility arising after the making of the contract does not excuse performance, is the one which fits your own case. Performance of a contract cannot be compelled, where performance would involve a violation of the law. Hence a contract is discharged, where after it has been entered into, a law is passed which makes performance unlawful. The exception does not apply, however, where the impossibility created by the law is only temporary, where the change in the law makes the contract only more burdensome or where the law in question is that of a foreign country and not a United States or a state law.

Thus it has been held that where the performance of a contract for loading a cargo at a foreign port is prevented by a declaration of war, rendering it impossible to provide ship or cargo without an illegal act of trading with the enemy, the contractor was relieved of liability. Another sample case would be where a railroad agreed to give annual passes in certain cases, and then the Commerce Act of 1906 made the giving of passes illegal.

While this world war has given rise to many new aspects of legal questions, and while the point you present has not been passed upon as yet by the courts, I believe that the governmental regulation in the matter of priority orders affecting freight shipments is of such a nature that contracts affected by such regulations would fall into the class in which the party would be relieved of performance. It seems to me certain that to perform your contract, if you cannot get a priority order—and I assume that you cannot for private work at this time—you would have to violate the law. If you would, you cannot be compelled to perform or to answer in damages.

You might be liable if it could be proved that the material which you need could be bought in your vicinity, without the use of railroad transportation. The mere fact that it would cost you more, or that it would be much harder for you to get the material, would not be an excuse on your part, if it would not be illegal for you to purchase and transport the material without a priority order.

I have in mind, particularly, at this time, brass pipe. I happen to know that if you could not purchase brass pipe from anybody but a manufacturer of my acquaintance, you could not get it without a priority order, for the Government has taken over his entire output.

The particular point which you raise is likely to turn upon the actual facts in the case, and if you are pressed by the owner of the dwelling house, in which you have contracted to install materials, it would be well to let an attorney go over the facts with you. What may seem to you to be impossible of performance, may not prove to be an impossibility in the eyes of the law. I can only state with definiteness that if you are prevented from performing your contract solely by reason of the priority regulations of the Government, you will be relieved of your liability under the contract.

If you have done nothing under the contract, neither of you will have any rights against the other, if you are excused from performance as above stated. The courts are in some conflict as to your right to recover for whatever part of the work, less than the whole, which you may have performed. Some courts hold that the party holding and retaining the property or benefit must restore it or pay for the benefit which he has received. Other courts hold that you cannot recover for partial benefits conferred.

To save future worry about such cases be sure to insert the conditions given above in your proposals and contracts.

THE AMERICAN ATTITUDE.

The Germans have boasted interminably of their will to victory, but the real will to victory is that of the American people who are fighting for no selfish purposes of their own and seek nothing but for a world in which they can live at peace with their neighbors, says the "New York World."

As the war enters upon its fifth year, its most striking aspect is this American attitude. The conflict is costing the American people approximately $50,000,000 a day. Their loans to the Allies are already double the total cost of the Civil War, yet nobody begrudges the expenditure; nor has the Government asked a single sacrifice in which the main body of the people has not gladly and instantly acquiesced.

The great mass of the American people would be glad to have peace come tomorrow if it were the right kind of peace. But they will fight four years more if necessary to prevent the wrong kind of peace and not waste a minute in counting the cost.

That is a solid rock of national determination which no German gun can ever shatter, and of all the military, economic and financial resources of the free nations that is perhaps the most important. It has given new faith and new courage to the civilization that is in a death grapple with Prussianism and it carries with it the assurance of final victory.

Lucky Man.

C. R. H. writes back from a training camp where he arrived last week that he has been equipped with shoes weighing not less than twenty-five pounds apiece. He presumes from that that he has been selected to kick the Kaiser.—"Kansas City Star."

QUESTIONS & ANSWERS

HOW TO SAVE THE CONDENSATION IN THIS LOW-PRESSURE STEAM JOB.

Editor "Domestic Engineering":—The writer has run up against a low pressure steam job, that is to be overhauled, and in which the condensation, which has heretofore been wasted, is to be returned to boiler.

All the radiation is located between the water line and the base of the boiler, and its distance from the boiler ranges from 15 to 100 feet. Most of the present radiation is in 2-inch coils.

My idea is to raise up from the boiler and extend down with gradual grade to a point above the coil farthest away, then drop down and connect up to horizontal coil with short branch rising out of main with close nipple and 45-degree ell.

The return is to start from this coil and pick up condensation from remaining coils, extending toward boiler, four in all, to be provided with air valve and swing check, placed between two 45-degree ells, close to return main, later to finally empty into some sort of a return trap or other device used for this purpose.

Do you think a return trap will give satisfaction, and where should it be located?

I would appreciate very much to have your advice on this point as well as your comment on the entire job.

Oregon. G. L. M.

We assume that,—except for the fact that the heating coils are below the water line of the boiler,—there is

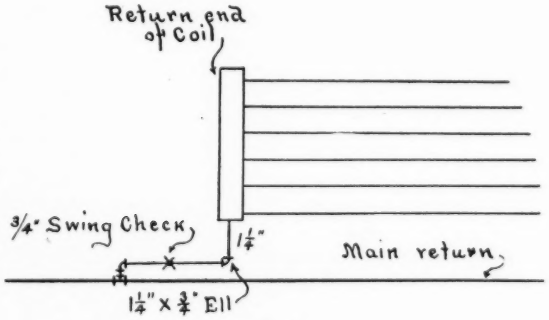


Fig. 1.

opportunity to obtain gravity drainage of the condensation from the coils to a point near the boiler.

This being true, either of two methods may be used, a condensation pump or a return trap. If the boiler is operated at limited high pressure, say, at not more than seventy-five or eighty pounds, the condensation may flow by gravity to the receiver of an electrically operated condensation pump, which will deliver it to the boiler direct against boiler pressure. Condensation pumps are built with a sufficient number of stages or impellers to return the condensation against a boiler pressure of one hundred and fifty pounds. If a pump of this character is used, the steam supply to the coils may be reduced to three or five pounds; as the condensation returns by gravity, no pressure is required on the returns to deliver it to the receiver of the pump. The cost of electric current is very little, as the switch is automatically controlled, the current being used only while the receiver is dumping.

If a return trap is used it should be located three or four feet above the boiler, and in this event there should be sufficient pressure on the return to lift the condensation up to the trap. A small receiver is placed at the side of the boiler on the floor of the boiler room, and the return water is delivered to the trap through this receiver. There are several styles of return traps.

Correspondent's suggested method of piping is good. In using check valves it is well to select a horizontal check having a very light clapper hung in an almost vertical

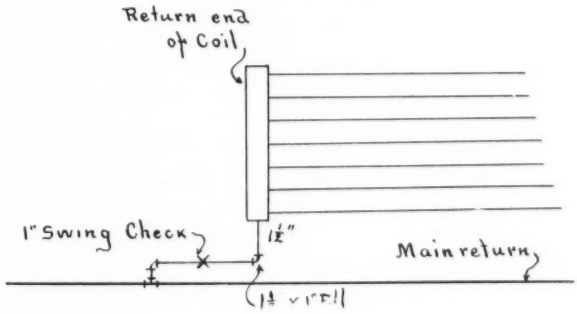


Fig. 2.

position and the horizontal pipe connection, in which the clapper is placed, should be reduced to one or two pipe sizes smaller than the returns from the coils. For example, Fig. 1 shows the return end of a coil having a 1¼-inch return connection. The check in this instance should be ¾-inch. If the return is 1½-inch, as shown by Fig. 2, the check should be 1 inch. The illustrations are intended to show the return ends of the coils, the air valves being omitted.

Correspondent does not give boiler pressure nor state if a boiler feed pump is used. In the event of a boiler feed pump being used, the main return can dump into a hot well, and the suction of the pump can be connected to the well. In this event neither a return trap nor condensation pump will be required.

Owatonna, Minn.—J. P. Thon has secured the contract for the installation of a new heating plant in the court house. The contract amounts to $5,142.

That's What Caused the Confusion

"I believe that everybody ought to say exactly what he thinks in his own way."

"And yet," replied the slow-speaking man, "that plan didn't seem to help much at the Tower of Babel."—"Washington Star."

WHY HOLDEN COULDN'T PAY *the* SUPPLY HOUSE

If a Contractor Cannot Collect From His Customers, How Can the Supply House Collect From Him?—This Problem Confronted Jack Holden—How He Solved It

By Wallace H. Bancroft

JACK HOLDEN turned away from the blue print he was studying. He read the letter the mail man had handed him. Attached to it was the monthly statement from the supply house, summarizing the account up to date.

His brow became corrugated. He looked depressed. There was something on his mind, although his conscience was clear.

Jack's spirit seemed to brighten when a portly gentleman walked in. Jack arose from his desk and extended the glad hand.

"Good morning, professor," said he.

Professor Hayes was the county superintendent of schools. He was a fine, old gentleman of the old school, a Virginian by birth. He was sharp-witted as a needle and a wonder as an educator. He had known Jack for years. In fact, he had taught him the three "R's" during the little red school house days when Jack was a tow-headed, barefoot boy with "turned-up pantaloons and merry whistle tunes."

"Jack, the board has voted to install a dozen showers in the Yorkville School in connection with the gymnasium. You installed some in District No. 10 School last month. We want you to repeat the operation again at the same figure."

Holden thanked the superintendent. "Very well, professor, I'll go right ahead with the work."

"I was on my way home," said Professor Hayes, "and I thought I'd come in and tell you about the showers."

The superintendent turned to depart. He hesitated somewhat. He was studying Jack's countenance. The professor was an extraordinary student of human nature. His keen, academic eye when focused upon anyone seemed to pierce the very depths of the soul, and no matter how adroitly the object of his gaze endeavored to conceal the truth, you could rarely fool Professor Hayes.

He used to say to his class in philosophy and ethics: "It is singular, but nevertheless true that one-half of the world is usually intent upon pulling the wool over the eyes of the other half. Longfellow was on the right track when he said: 'Things are not what they seem.'"

"Jack, you are depressed!" said Professor Hayes, looking him squarely in the eye.

"How do you know?" replied Holden smiling.

"Well, Jack, it seems that I have a kind of X-Ray faculty of seeing beneath the camouflage of appearance. Perhaps some evil tide threatens to engulf your bark on the sea of business?"

Jack bit his lip and resumed smoking the butt end of his cigar.

"Professor, you know I've always admired you—your wonderful brain and magnificent character. You are both a man and a gentleman, and true blue. I know you are interested in the welfare of your former pupil—the barefoot boy who used to recite in the little country school back in the eighties, when you were a struggling young school master. Yes, I am depressed. You have penetrated the camouflage of appearance."

"Jack, you are welcome to the best advice that I can give—advice that has been mellowed by sixty-two years of residence on this stormy planet of ours."

Jack handed Professor Hayes the letter he had received from the supply house.

"Won't you sit down, professor?"

The superintendent sat down and adjusted his eye glasses.

Jack paced the floor, absorbed in thought.

"That is rather a menacing letter," observed Professor Hayes, looking up. "Yes, rather menacing."

"The question is this," said Holden.

"How can I pay my bills when my customers do not pay me?"

"Your question is very good—eminently in order," observed the professor.

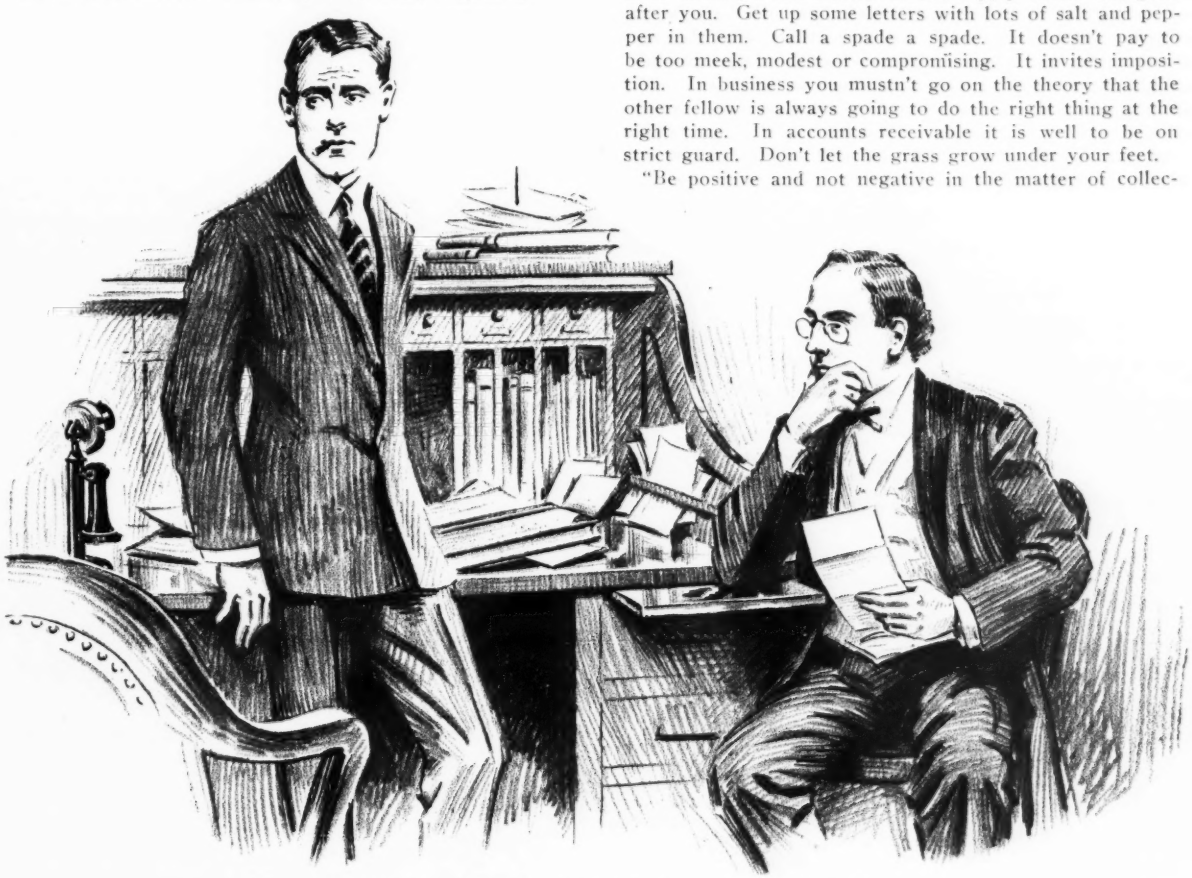
"I would answer it by putting an elementary question. Why don't you collect?"

"Yes, why don't I collect," replied Jack. "Why don't my customers come across, or why don't they collect? If you look at my accounts receivable, you would fancy that I was sprouting into a near millionaire. But then behold the cash on hand—my bank balance! Why, I look like a dying duck in a thunder storm. My profit is represented by my accounts receivable, and then Uncle Sam comes along and sticks an excess profit tax on my business. Then I turn around and pay money—a tax on profit I haven't received. I've tried to play the game square and avoid misplays. I've made a few good hits and home runs, as it were. A year ago I was the ace of diamonds; today I'm only the deuce of spades from the standpoint of my creditors. Business rather reminds me of school days. Do you remember how you would eulogize me one day and then sit down on me full weight the next? I was like a thermometer showing different degrees of temperature at different times—hot, warm, cool and freezing."

"Yes, that's true," said Professor Hayes, "you can't always be 100 per cent efficient. Your barometer of pep and power will fluctuate. Even the most brilliant general will advance, then hold his own, then retreat, and then advance again. On the whole, efficiency must be con-

sidered in the aggregate. It's what you accomplish throughout the year that rings the bell of profit and loss. Some losses, some reverses, are always possible, but then your aggregate efficiency should counter-balance, outweigh them at the end of the year."

"Well," replied Holden. "I must confess that my aggregate efficiency this year would not ignite the Mississippi or any other river. A salesman friend of mine was in here the other day and he jokingly told me that I must be troubled with leakage of the brain pan. In other words, that I wasn't operating my business along strictly modern lines—that I needed system, ideas, originality."



"How can I pay My Bills, when my Customers do not pay me?"

Professor Hayes wiped his glasses with his handkerchief.

"I should say that you were troubled with leakage of the cash."

"Very good, professor, very good," said Jack, "but let's investigate this leakage proposition."

Holden produced his ledger.

"Now look here! For example, here's old Deacon Hardcastle who has just donated $1,000 to the orphanage fund of the First Methodist Church. He's been owing me $235.80 for over three months. And here is Mrs. Gwendolyn Miller, the leader of our fashionable tribe. That lady has been owing me $352.43 for remodeling the bath room, water supply and heating systems in her country home She is reported to be butterflying in the East—Atlantic City, I believe. She'll be gone all summer I'm told. Then let's see. Oh, yes, here is young Willougby, the mischievous boy, who tied a calf to the school house door one night, and you expelled him for two weeks. Well, he later married old Kirk's daughter and fell into a cool $150,000. I put in a vapor heating plant in his house over four months ago. He's down in Texas operating a number of oil wells and won't be back for six weeks. I have billed him, but he evidently thinks that I don't need the money, and that I can wait his convenience."

"Well, now Jack, let me ask you this: Why don't you demand your money—insist upon it. Merely sending them a monthly statement is of no avail. If necessary go after them just as strong as the supply house has gone after you. Get up some letters with lots of salt and pepper in them. Call a spade a spade. It doesn't pay to be too meek, modest or compromising. It invites imposition. In business you mustn't go on the theory that the other fellow is always going to do the right thing at the right time. In accounts receivable it is well to be on strict guard. Don't let the grass grow under your feet.

"Be positive and not negative in the matter of collections. That used to be one of my axioms when I taught commercial law about ten years ago. I am told by attorneys for collection agencies that it is amazing the number of apparently good-pay people who profess all the virtues and yet must be brought to time on debts ranging from $10 to $500 or more. Take old Deacon Hardcastle, our psalm-singing friend. Who would ever think that he'd be owing a plumber's bill, three months past due? Here we get back to the philosophy of appearance again: 'Things are not what they seem.' When one contemplates his righteous demeanor on Sunday morning as he walks up the church aisle with the collection basket, who would think that he was lax in paying his just debts? And yet Hardcastle is no doubt all right. You'll get your money, but don't dillydally with him.

"Jack, I should advise you to start a vigorous offensive. You have four kinds of available ammunition—telephoning, letters, personal interviews and the collection agency.

The first three will probably be effective in most instances. Don't let your delinquents retreat, as it were. Keep pressing them. Don't give them any rest or peace of mind, until they have settled up. You have a reputation for superior work, but it is very apparent that there is a weak link in your business practice. Your collection methods are poor, ineffective.

"Now, you go ahead, Jack, and start this collection offensive. You have the ability and initiative to carry it forward. Now you do that, and then call me up in about two weeks."

Jack Starts Collection Drive.

Holden plunged into the work of rescuing himself from the fate of a bankrupt. He formulated a number of collection letters and instructed his lady bookkeeper to telephone those delinquents who could be reached. If the telephone tactics failed he was prepared to give them a baptism of plain fact by mail. If that failed, he would make personal calls, and if that proved a fizzle, he would let the law take its course.

Holden coached his bookkeeper on methods of dunning delinquents on the telephone. The young woman called up one debtor, the wife of one of the local grain merchants, who had ordered a built-in-tub and new bath accessories installed in her home.

"Good morning, Mrs. Graham!" said the bookkeeper. "This is the office of John Holden, plumbing and heating —his bookkeeper speaking. Pardon me, but you have doubtless overlooked a little matter of $95.50. You have no doubt forgotten that yesterday was discount day. If you will kindly mail your check today you will still save 2 per cent on your bill." The foregoing represented the first telephone call. If no remittance was forthcoming during the following two days, the bookkeeper made a second telephone call.

"Good morning, Mrs. Graham! This is the office of John Holden, plumbing and heating. We have some paper to meet at the bank tomorrow and it will be a real accommodation, if you will kindly send us your check today. We are sorry to note that your discount time has passed."

If the second call failed to bring the desired response, the bookkeeper would make a third telephone call.

"Good morning, Mrs. Graham! This is the office of John Holden, plumbing and heating. We were rather surprised to note on opening the morning mail that we didn't receive your check. Probably you mislaid it on your desk or forgot to mail it."

Simultaneous with the third telephone call, a letter was sent out, addressed to Mrs. Graham:

"Dear Madam:

"My bookkeeper informs me that you promised to forward your check on the 10th instant. It has failed to arrive. Probably you have simply overlooked it, as you may be busy with other matters. We are sure, however, that when your attention is called to this account, you will mail us your check at once. I assure you that prompt action on your part will be greatly appreciated.

"Very truly yours,

John Holden."

In the case of a dry goods dealer, whose account with Holden was long past due, the following letter was sent:

"Dear Sir:

"I was looking over the ledger this morning in the absence of the bookkeeper, and was suddenly surprised to learn that your account was still lingering on the books. I thought that there must be some mistake, and was rather under the impression that it had been settled some time ago. The bookkeeper upon returning informed me that I was laboring under an erroneous impression. No doubt you are just as proud of your business record as a dry goods retailer, as we are of ours in the plumbing and heating line. We cannot continue to maintain our record with our creditors anymore than you can with yours, if we get into the habit of requesting extended credit. As a business man you doubtless understand my viewpoint. You will therefore confer a real favor if you will mail your check today so that we can strike your account from the ledger."

In Holden's collection drive, a spirit of friendliness was in evidence. He avoided roughshod tactics. All his telephone calls and letters were worked out on the theory that every customer is financially responsible and that their future business is worth preserving.

He fired telephone calls or letters at Deacon Hardcastle, Mrs. Gwendolyn Miller and young Willoughby. He pursued the same tactics with them as he had with other delinquents. He made a few personal calls in some instances. When the checks began to arrive, he communicated with the supply house, stating that he would be able to wipe out the old score in short order—and he did.

Two weeks after the start of his drive, he called up Professor Hayes.

"Hello, Professor. This is Jack. I've cut the word 'dillydally' out of my business vocabulary. I digested your advice and went right after 'em. My modus operandi was friendliness plus firmness. The crisis has passed, and I'm now well fortified."

"Go back to the head of the class," said the professor. "You're the ace of diamonds once more, but have a care that you don't become the deuce of spades again."

Richard E. Morris.

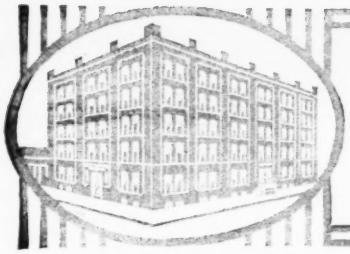
Richard E. Morris, a retired master plumber of Brooklyn, N. Y., died at his home in that city on Saturday, August 3rd, in his fiftieth year. He retired from the plumbing business a few months ago owing to poor health. His wife and two daughters survive him.

Valentine Eseldroth.

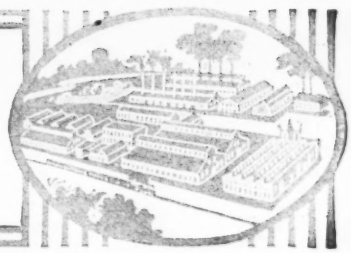
Valentine Eseldroth, of Eseldroth Co., Newark, N. J., died recently at his home in that city, in his 36th year. He had managed the business founded by his father since the latter's death, and he had a large acquaintance in the plumbing and heating trade. His wife and two children survive him.

Frank A. Chase.

Frank A. Chase, for about twenty-five years engaged in the plumbing and heating business at Auburn, Maine, died at his home in that city on August 1st. He had been in poor health since May, but his death came suddenly and was a shock to his many friends. Mr. Chase was born in Portland in 1852, the son of William A. Chase. He spent his early life in Portland, but had lived in Auburn since he was 21 years of age. He was a member of the firm of Chase & Corey, in partnership with Frank A. Corey on Turner Street, for about fifteen years, and for the last ten years has maintained a smaller shop on Court Street, near his home. Mr. Chase was a member of Androscoggin Lodge of Odd Fellows and of Lewiston Lodge of Elks.



Among the Wholesalers and Manufacturers



DECLARE QUARTERLY DIVIDENDS.

The Standard Sanitary Manufacturing Co., of Pittsburgh, Pa., has recently declared its regular quarterly dividend of one and a half per cent on common, and one and three-quarters per cent on preferred stock. Checks were mailed August 10th.

The American Radiator Co., of Chicago, has declared its quarterly dividend of three per cent on common stock, payable September 30th, and one and three-quarters per cent on preferred stock, payable August 15th.

AMERICAN PIN CO.'S NEW YORK OFFICE IN NEW LOCATION.

The New York office of the American Pin Co., of Waterbury, Conn., has been moved from 890 Broadway to 507 Fifth Avenue, near Forty-second Street ,where commodious quarters have been secured. L. S. Rothwell, manager of the office, is just completing his fifteenth year with the company.

OPENS NEW WELDING SHOP.

The Imperial Brass Mfg. Co., of Chicago, has just opened a new welding shop at its plant. This department occupies a new building, 50 by 150 feet, and it uses the oxy-acetylene welding process.

BUILDING THE STANDARD INVESTMENT AFTER THE WAR.

Many jobbers and manufacturers of plumbing and heating supplies are devoting serious thought to post-war industrial possibilities and probabilities, and are attempting to lay plans accordingly. It is, of course, generally thought that with the building program five or six or even more years behind at the close of hostilities, the double-quick step in construction will be necessary for a time at least. An opinion expressed last week by a prominent manufacturer in New York brought out a phase of the investment situation, probably not thought of before. Speaking on the theory that the railroads would be permanently retained by the Government, of which, the speaker said, he had no doubts, the natural field for re-investment of the enormous sums, now secured by railroad property, would be the real estate and building market. This, he said, even in the face of every possible grand rush in building, immediately after the war closes, will have a tendency to stabilize the market, and the building industry will be the standard investment.

CONFERENCES TO PLAN CONSERVATION OF FREIGHT CAR SPACE.

The Truck Owners' Conference, Inc., of Chicago, announces that plans have been made for nineteen two-day conferences in as many cities during the next ten months. The opening conference will be held in Detroit Mich., at the Board of Commerce Building, on September 19th and 20th. The official program will consist of Detroit speakers, and special films of some of the more efficiently operated truck fleets in Detroit and Chicago will be shown. The purpose throughout is to secure greater efficinecy in truck operation the country over. Said Harold P. Gould, chairman of the Conference, this week: "At this time, when freight cars are at a premium, the development of more efficient ideas in motor truck transportation is a vital factor in the conservation of freight car space. Every foot of space so saved represents one more shell to harass the Hun, or another bit of flour for our Allies. Thus the Conference is a patriotic movement toward helping to win the war."

WESTERN TRADE GOLF ASSOCIATION HOLDS AUGUST TOURNAMENT AT HINSDALE, ILL.

The Western Trade Golf Association held its August tournament on the links of the Hinsdale Golf Club, Hinsdale, Ill., on Tuesday, August 13th. Despite the hot weather, nearly forty members and guests reported for gutta percha action when the afternoon phase of the day's drive opened.

Practically all of the players arrived at the club grounds via the Burlington Route, while a few motored from Chicago.

A. F. Johnson carried away the day's honors by winning the Association cup, turning in a net score of 62.

T. E. Roberts, whose card showed 79 net, was acclaimed the winner of the guest prize—a handsome watch medal fob.

Following the morning qualifying round, the usual luncheon was served at the club house at 12:30 p. m.

During the dinner in the evening, a challenge from the Eastern Trade Golf Association was read, relative to holding the September tournaments in the East and West on the same date, with the best players of both associations playing. It was announced that the details of this proposal would be perfected later.

Votes of thanks were extended to the management of the Hinsdale Golf Club and to J. B. Berryman, the association's host, for the courtesies extended to the organization during the day.

The individual scores were as follows:

	Gross	Handicap	Net
W. Wickersham	87	16	71
G. W. Christopher	103	20	83
H. E. Keeler	95	24	71
C. R. Elliott	106	24	82
S. S. Wright	Did not finish.		
W. H. Meyst	92	14	78
J. E. Urban	103	30	73
J. R. McKeough	104	30	74
W. D. Dale	101	20	81
L. C. Huckins	108	24	84
F. S. Crumley	125	30	95
Wm. Devine	129	30	99
Paul Blatchford	105	24	81
T. E. Roberts (Guest)	101	22	79
A. F. Johnson	90	28	62

H. D. Sayre (Guest)	104	18	86
C. C. Todd	123	30	93
F. K. Dibley	120	28	92
R. Bruce Fulton	115	30	85
C. S. Pitkin	118	28	90
A. S. Frampton	105	22	83
L. R. Taylor	95	14	81
D. E. McCabe	101	22	79
J. P. Dugger	109	28	81
S. H. Moon	82	12	70
C. D. Little	102	20	82
R. B. Stiles	102	30	72
F. M. Hoblitt (Guest)	109	24	85
J. M. Stannard	100	12	88
G. W. Clucas (Guest)	165	30	135
J. H. McAloon	116	30	86
R. Flinder	116	30	86
Jos. Carroll	110	26	84
E. W. Sanborn	98	19	79
H. N. Booth	124	30	94
P. M. Munn	136	30	106
E. J. Claffey	117	26	91
R. M. Stackhouse	106	24	82
H. Shaw	99	8	91

The winners of the various flights were as follows:

First flight, L. R. Taylor; runner-up, D. E. McCabe.

Second flight, S. H. Moon; runner-up, R. B. Stiles.

Third flight, C. R. Elliott; runner-up, H. E. Keeler.

Fourth flight, W. Wickersham; runner-up, Paul Blatchford.

Fifth flight, S. S. Wright; runner-up, W. B. Dale.

Sixth flight, J. E. Urban; runner-up, N. H. Blatchford.

Seventh flight, R. M. Stackhouse; runner-up, C. S. Pitkin.

Eighth flight, A. S. Frampton; runner-up, Wm. Devine, Jr.

Ninth flight, J. R. McKeough; runner-up, R. Bruce Fulton.

Tenth flight, E. W. Sanborn; runner-up, H. N. Booth.

C. S. Pitkin, L. C. Huckins, W. B. Dale, F. S. Crumley, C. C. Todd and William Devine, Jr., at the Western Trade Golf Association's Tournament at Hinsdale, Ill., August 13, 1918.

BUILDING PERMITS FOR JULY.

The two elements most conspicuous in current building operations are factory additions, necessitated by war work, and housing needs for war workers. These are considerable, for there has been a great displacement of population, due to the intensive Governmental activities. Incidental to the above there has been some work of a miscellaneous character, including schools, places of amusements, etc., for it has been learned that various other structures besides dwellings are essential to insure the greatest efficiency of workmen. The present policy of the Government, to shift to the greatest degree possible factory work to centers where acute housing congestion does not exist, is widening the area where building operations may be regarded as active. A conspicuous example of this is furnished by the building permits, issued during July at Chicago. There was a gain of 16 per cent in estimated cost over July last year, and it was due to Government work.

The building permits issued in 140 cities during July, as officially reported to the "American Contractor," Chicago, totaled $41,809,299, compared with $57,095,689 for July, 1917, a decrease of 36 per cent. The total number of permits issued in these 140 cities, however, was practically the same, 20,430, against 20,730, showing that the present tendencies are towards the construction of smaller buildings, many of the permits relating to repairs, extensions and remodelings, of old buildings. This trend towards the lighter work is greater than appears from the figures themselves, inasmuch as costs are now considerably higher than a year ago. The permits last month averaged in estimated costs $2,046 each and for July last year $2,754 each.

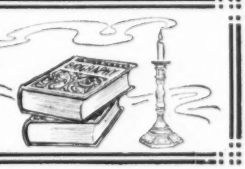
Of the 140 cities included, 50 show gains. The cities where the increase is shown are widely distributed, but the greater activity was due usually to war work, direct or indirect. The detailed statement follows:

	July, 1918. Estimated cost.	July, 1917. Estimated cost.	Pct. Loss.
Akron, O.	$ 812,550	$ 1,117,958	27
Albany, N. Y.	100,955	119,865	15
Allentown, Pa.	51,300	106,230	51
Altoona, Pa.	21,115	78,697	74
Atlanta, Ga.	439,068	331,846	*32
Atlantic City, N. J.	28,500	45,044	36
Auburn, N. Y.	26,055	29,935	12
Baltimore, Md.	364,590	888,992	58
Bayonne, N. J.	56,300	112,275	49
Berkeley, Cal.	68,800	204,500	66
Binghamton, N. Y.	159,613	133,374	*19
Birmingham, Ala.	81,851	242,508	66
Boston, Mass.	669,250	1,516,863	55
Bridgeport, Conn.	320,526	334,020	4
Brockton, Mass.	21,355	159,240	86
Buffalo, N. Y.	972,000	1,472,000	33
Camden, N. J.	95,025	24,623	*285
Canton, O.	115,612	216,705	46
Cedar Rapids, Ia.	141,000	189,000	25
Charleston, S. C.	29,950	22,870	*30
Charlotte, N. C.	48,960	53,485	8
Chattanooga, Tenn.	106,601	89,489	*19
Chelsea, Mass.	19,750	15,700	*25
Chicago, Ill.	4,885,600	4,204,100	*16
Cincinnati, O.	396,648	707,615	43
Cleveland, O.	1,382,400	2,667,530	48
Colorado, Springs, Colo.	7,340	7,110	*3
Columbus, O.	129,905	268,735	52
Covington, Ky.	6,150	12,265	49
Dallas, Tex.	94,854	145,720	34
Davenport, Ia.	99,887	62,053	*60
Dayton, O.	324,269	257,678	*25
Decatur, Ill.	86,335	173,625	50
Denver, Colo.	388,700	217,400	*74

	July, 1918. Estimated cost.	July, 1917. Estimated cost.	Pct. Loss.
Des Moines, Ia.	602,858	103,310	*483
Detroit, Mich.	2,210,880	4,188,470	47
Dubuque, Ia.	6,720	34,980	80
Duluth, Minn.	283,190	315,561	10
East Orange, N. J.	196,248	109,635	*61
East St. Louis, Ill.	170,825	34,050	*401
Elizabeth, N. J.	54,787	78,138	24
Erie, Pa.	206,903	224,209	7
Fitchburg, Mass.	108,377	21,682	*399
Fort Worth, Tex.	198,180	64,596	*206
Galveston, Tex.	15,194	14,865	*2
Grand Rapids, Mich.	109,692	180,885	39
Hamilton, O.	134,580	30,441	*347
Harrisburg, Pa.	22,985	113,860	79
Hoboken, N. J.	13,145	23,800	44
Holyoke, Mass.	11,050	31,185	64
Houston, Tex.	247,134	192,927	*27
Huntington, W. Va.	115,980	49,993	*131
Indianapolis, Ind.	651,808	516,804	*26
Jackson, Mich.	19,225	142,975	86
Jacksonville, Fla.	129,878	709,650	81
Jersey City, N. J.	697,230	255,838	*172
Joliet, Ill.	31,500	66,500	52
Kansas City, Kans.	36,975	57,480	35
Kansas City, Mo.	245,650	1,040,740	76
Knoxville, Tenn.	40,180	60,467	33
Lawrence, Mass.	108,116	26,125	*313
Lincoln, Nebr.	63,360	74,875	15
Long Beach, Cal.	290,574	82,585	*251
Los Angeles, Cal.	820,480	1,063,808	22
Louisville, Ky.	207,785	168,670	*23
Lowell, Mass.	30,745	85,610	64
Lynn, Mass.	11,045	31,993	65
Malden, Mass.,	33,350	28,370	*17
Manchester, N. H.	50,655	48,969	*3
Memphis, Tenn.	42,204	274,670	84
Milwaukee, Wis.	650,676	924,489	29
Minneapolis, Minn.	1,118,000	979,885	*14
Montgomery, Ala.	15,395	33,749	54
Mt. Vernon, N. Y.	48,550	34,300	*41
Nashville, Tenn.	53,520	73,830	27
Newark, N. J.	635,772	666,049	4
New Bedford, Mass.	57,437	70,850	18
New Haven, Conn.	110,689	444,912	75
New Orleans, La.	183,049	818,573	77
New York City	5,709,523	5,950,542	4
Borough Queens	542,056	673,125	19
Borough Manhattan	1,725,645	1,894,095	8
Borough Richmond	189,370	124,650	*52
Borough Brooklyn	2,420,236	1,975,406	*22
Borough Bronx	832,216	1,283,266	35
Oakland, Cal.	428,390	345,085	*24
Oklahoma City, Okla.	317,269	233,525	*35
Omaha, Neb.	320,840	656,250	51
Pasadena, Cal.	37,274	202,527	81
Passaic, N. J.	15,225	54,600	72
Paterson, N. J.	125,933	96,237	*39
Peoria, Ill.	55,055	568,480	93
Philadelphia, Pa.	1,141,045	5,195,365	78
Pittsburgh, Pa.	978,642	1,375,752	29
Portland, Me.	73,915	125,225	40
Portland, Ore.	371,555	358,955	*3
Portsmouth, Va.	33,870	6,670	*407
Pueblo, Colo.	134,184	62,605	*112
Quincy, Mass.	75,447	195,258	60
Reading, Pa.	180,850	58,275	*211
Richmond, Va.	70,552	182,841	59
Roanoke, Va.	19,780	59,625	66
Rochester, N. Y.	60,555	574,548	
Sacramento, Cal.	61,982	65,298	5
Saginaw, Mich.	98,798	13,275	*644
Salem, Mass.	32,631	113,525	71
Salt Lake City, Utah	119,430	194,700	38
San Antonio, Tex.	189,178	126,370	*49
San Diego, Cal.	84,600	78,485	*7
San Francisco, Cal.	850,073	917,850	7
San Jose, Cal.	60,980	27,989	*118
Savannah, Ga.	10,170	34,200	70
Schenectady, N. Y.	135,527	396,045	65
Scranton, Pa.	91,047	52,723	*72
Seattle, Wash.	912,985	475,190	*92
Sioux City, Ia.	270,965	241,210	*12
Somerville, Mass.	149,200	73,050	*104
South Bend, Ind.	347,711	282,163	*19
Spokane, Wash.	52,960	258,330	79
Springfield, Ill.	47,790	69,085	30
Springfield, Mass.	124,035	170,382	27
Springfield, Mo.	16,685	59,500	71
St. Louis, Mo.	1,159,535	1,352,203	14
Stockton, Cal.	53,889	110,829	51
St. Paul, Minn.	362,747	1,014,635	64
Superior, Wis.	34,399	195,420	82
Syracuse, N. Y.	162,735	321,664	51
Tacoma, Wash.	244,871	72,941	*235
Tampa, Fla.	34,027	130,702	73
Terre Haute, Ind.	57,455	61,984	7
Toledo, Ohio	449,922	361,055	*24
Topeka, Kans.	18,375	47,280	61
Trenton, N. J.	31,060	114,631	72
Troy, N. Y.	9,250	25,210	63
Utica, N. Y.	109,550	133,820	56
Washington, D. C.	432,170	644,670	32
Wheeling, W. Va.	50,067	32,802	*52
Wichita, Kans.	144,400	453,174	68
Wilkes-Barre, Pa.	40,335	59,234	31
Wilmington, Del.	164,411	326,525	49
Worcester, Mass.	246,714	309,928	20
Yonkers, N. Y.	30,000	167,200	82
York, Pa.	13,651	8,335	*63
Youngstown, Ohio	504,495	357,180	*41
Total	$41,809,299	$57,095,689	26

*Gains.

Personal Mention



Samuel H. Moon, the newly-elected secretary-treasurer of the Standard Sanitary Mfg. Co., of Pittsburgh, Pa., was in Chicago this week.

George B. Baldwin, manager of the Chicago branch of the Walworth Mfg. Co., of Boston, Mass., has just left on a two weeks' motor trip through the Northwest.

Lee A. Kelly, manager of the New York office of the Thomas Maddock's Sons Co., who recently joined the United States Ordnance Corps, has been made sergeant-major of his company. He is stationed at Edgewood Arsenal, Maryland.

F. C. Peters, manager of the shipping department of the Pittsburg Water Heater Co., Pittsburgh, Pa., was in Chicago on Tuesday and Wednesday of this week.

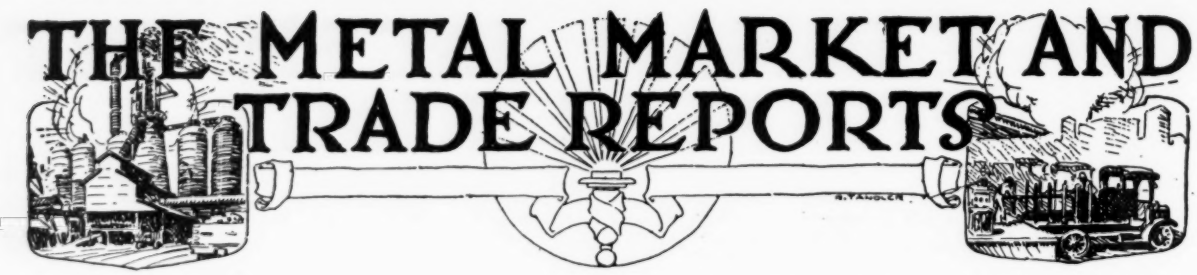
Charles D. Symms, president of the Plumbing Supply Co., of Sioux Falls, S. D., called on some of his friends in the Chicago trade last Wednesday and Thursday.

H. G. Miller, of the sales force of the Thomas Maddock's Sons Co., of Trenton, N. J., has received his commission as a first lieutenant in the Quartermaster's Corps. He will train at Jacksonville, Fla., for awhile and is then scheduled to go to Picardy in France.

M. Warshawsky, of Bayonne, N. J., has been appointed sales representative in New Jersey for the Sloan Valve Co., of Chicago. Mr. Warshawky is plumbing inspector in Bayonne, and he will use his spare time to promote the Sloan Valve Co.'s interest among the jobbers.

J. H. Young, manager of the Chicago branch of the Burnett-Larsh Mfg. Co., of Dayton, O., J. F. Dare and R. P. Watson, southwestern and southeastern sales representatives in Illinois, are attending the annual state fair at Springfield, where the concern is maintaining a large exhibit of its products

THE METAL MARKET AND TRADE REPORTS



Steel and Iron.

An increased rate of daily production and the cutting out of all undertakings not essential to the war program of the Government have been responsible for a decline in the tonnage of unfilled orders since last December. During July the United States Steel Corporation reduced the amount of unfilled orders by 35,065 tons. The policy, as with all large productions, is the forced one, which means that the Government's requirements and those of the Allies are met as promptly as possible, and outside business, which has no direct or indirect connection with the war program, has been practically eliminated. Iron statistics show a remarkably heavy outturn, clearly indicative of the high pressure under which the furnaces are working. There is a steady scramble for iron, which has called for increasing interference on the part of the Government in the matter of distribution, so that producers never know to what extent they may be able to fill orders of their regular customers, nor even what grade of iron they may continue to produce. Prices are based upon the old standard grade of No. 2 foundry iron at $33 a ton, and basic iron at $32, at the furnace, which prices will be in effect until October 1st.

Copper.

Demand for copper has been good, since it became known that the price would remain at 26 cents for the period to November 1st. The only change made was in the agreement, which provides that the price to be paid shall be that, ruling at date of shipment instead of the date the sale is made as heretofore, so that there will be no incentive to hold off business again. Production continues very heavy, but demand has been heavier, and only those consumers who have Government work on hand are being supplied at the moment.

Lead.

The scarcity of lead is somewhat acute, and the market is bare, and holders demand a stiff premium. Some sales were reported as high as 8.90 cents for single car lots. The demand by our Government and the Allies has been more than was expected, but it is expected that by fall much of the heavy contract business will be cleaned up.

Spelter.

The market in spelter advanced last week steadily, caused by increased buying interest. At the end of the week prime Western was quoted at from 8.65 to 8.75 cents, New York, and 8.35 to 8.50 cents in East St. Louis.

Tin.

The tin market is demoralized, owing to the uncertainty as to what is happening or about to happen in England, where prices fluctuated violently last week. Very little is known about the negotiations now pending between the American and British governments. But it is the popular opinion that some arrangements are under discussion, which will result in a definite understanding as to price, and perhaps distribution, which may place tin in the same relation to sellers and buyers as is the case with copper in the local market. Arrivals have been ample for all consuming needs, and buyers can take things easy for a while. Chinese tin for prompt delivery, New York, is quoted at 92½ cents, and Banka at the Coast is quoted at 92 cents.

Other Metals.

Quotations on other metals in New York are as follows:

Aluminum (in 100-pound lots)	49 cents per lb.
Antimony, Chinese and Japanese	17 cents per lb.
Solder No. 1	65 cents per lb.

New York Old Metal Market.

The following prices are current for old metals:

	Buying.	Selling.
Copper, heavy	24 cents	25 cents
Copper, light	20 to 21 cents	23 cents
Brass, heavy	14 to 14½ cents	15¾ cents
Brass, light	12 to 12½ cents	13½ cents
Brass turnings	14 to 14¾ cents	15½ cents
Brass clippings	15½ to 16½ cents	17¼ cents
Tea lead	5¾ to 6¼ cents	7 cents
Aluminum clippings	30 to 32 cents	33 cents
Solder joints	14½ to 15 cents	16 cents
Lead, heavy	7 to 7¼ cents	7¾ cents
Cocks and faucets	18½ to 19 cents	20 cents
Mixed babbitt	8 to 8¾ cents	9½ cents

Chicago Old Metal Market.

Chicago wholesale dealers' prices are nominally as follows:

	Buying.	Selling.
Heavy yellow brass	15 to 15½ cents	16½ cents
Brass, light	11 to 11½ cents	13 cents
Brass, medium	12¼ to 12¾ cents	13¾ cents
Brass clippings	15½ to 16 cents	17 cents
Red brass	21½ to 22 cents	23 cents
Cocks and faucets	17 to 18 cents	19 cents
Copper, heavy	23 to 23½ cents	24½ cents
Copper, light	20 to 20½ cents	22 cents
Lead, heavy	6¾ to 7 cents	7½ cents
Tea lead	5¾ to 6 cents	6½ cents
Lead dross	4¼ to 4½ cents	5½ cents
Solder joints	15¼ to 15¾ cents	16½ cents
Old iron pipe, per ton	$24.00	$25.00

The Pipe Market.

No changes have been announced in the pipe market during the last weeks.

Quotations on less than car lots of full weight steel pipe remain as follows:

	Butt Weld.		Lap Weld.	
	Blk.	Galv.	Blk.	Galv.
⅛ to ⅜ inch	38	10	....	....
½ inch	42	26	....	....
¾ to 3 inch	45	30	....	....
2 inch	....	....	38	24
2½ to 6 inch	....	....	41	27
7 to 12 inch	....	....	38	23
12 to 14 inch	....	....	28½	....
15 inch	....	....	26	....

The quotations apply to all shipments from stock, regardless of quantity.

On extra strong and double extra strong steel pipe in less than car lots, quotations are as follows:

	Extra Strong Plain Ends Butt Weld		Extra Strong Plain Ends Lap Weld		Double Extra Strong Plain Ends Butt Weld		Double Extra Strong Pl'n Ends Lap Weld	
	Blk.	Galv.	Blk.	Galv.	Blk.	Galv.	Blk.	Galv.
¼, ⅜ and ½ inch	29	9	....	....	....	....	....	....
⅝ inch	34	14	....	....	25	5	....	....
¾ to 1½ inch	38	18	....	....	28	8	....	....
2 to 2½ inch	39	19	....	....	30	10	....	....
3 inch	39	19	....	....	....	....	....	....
2 inch	....	....	31	12	....	....	23	4
2½ to 4 inch	....	....	34	15	....	....	25	6
4½ to 6 inch	....	....	33	14	....	....	24	5
7 to 8 inch	....	....	29	10	....	....	19	List
9 to 12 inch	....	....	24	5	....	....	....	....

With threads only, the basing discount is 1 and 1½ points lower. With threads and coupling the basing discount is 3 points lower. The quotations apply to all quantities less than car lots.

Quotations on full weight genuine iron pipe, in less than car lots, are as follows:

	Butt Weld. Blk.	Butt Weld. Galv.	Lap Weld. Blk.	Lap Weld. Galv.
⅛ and ¼ inch	16	+13	....	....
⅜ inch	17	+12	....	....
½ inch	21	1	....	....
¾ and 1 inch	26	8	....	....
1¼ inch	26	8	11	+6
1½ inch	26	8	18	2
2 inch	....	....	19	3
2½ to 6 inch	....	....	21	6
7 to 12 inch	....	....	18	3

These quotations are f. o. b. Pittsburgh, and apply to all shipments from stock, regardless of quantity.

On extra strong and double extra strong genuine wrought iron pipe, with plain ends and in less than car lots, the quotations are as follows:

	Extra Strong Butt Weld Blk.	Extra Strong Butt Weld Galv.	Extra Strong Lap Weld Blk.	Extra Strong Lap Weld Galv.	Double Extra Strong Butt Weld Blk.	Double Extra Strong Butt Weld Galv.	Double Extra Strong Lap Weld Blk.	Double Extra Strong Lap Weld Galv.
⅛ to ⅜ inch	11	+9	....	....	....	....	....	....
½ inch	16	+4	....	....	3	+17	....	....
¾ and 1 inch	22	2	....	....	8	+12	....	....
1¼ inch	22	2	8	+12	8	+12	....	....
1½ inch	22	2	14	+6	8	+12	3	+16
2 inch	....	....	16	+4	....	....	3	+16
2½ to 4 inch	....	....	18	+2	....	....	5	+14
4½ to 6 inch	....	....	17	+3	....	....	....	....
7 to 8 inch	....	....	9	+11	....	....	....	....
9 to 12 inch	....	....	4	+16	....	....	....	....

These retail prices are f. o. b. Pittsburgh, and apply to all quantities except in car lots. With threads only, the basing discount is 1½ points lower. With threads and couplings, the basing discount is 3 points lower.

To ascertain the price in any city, deduct the proper freight rate from Pittsburgh to that city. To illustrate: ¾ to 3-inch steel pipe, black, is 45 per cent off, Pittsburgh. The freight to Chicago is 39 cents, or it would be 45 per cent minus .039, or .411 per cent Chicago for 10 cents a hundred freight you should deduct one point.

NICKEL ORE IN ALASKA.

Nickel ore has been discovered in three localities in Alaska, according to the United States Geological Survey. Deposits on Chicagof Island, near Copper River, and on Knight Island, Prince William Sound, are being prospected, but little authentic information regarding them is yet available.

Deposits on Chicagof Island are on the west coast, about 65 miles northwest of Sitka. Ore containing nickel and copper was found in three unconnected outcrops about half a mile apart. Neither the outcrops nor the underground workings are of sufficient extent to permit any reliable estimate of the amount of ore that may be present in this vicinity. It is believed that diamond drilling near the known outcrops and at the localities where disseminated ore is seen may reveal additional ore bodies that do not reach the surface.

The small amount of underground work done in the Copper River district makes estimates of nickel ore there impossible. A selected specimen of ore contains 7.23 per cent nickel and a trace of cobalt, but most of the known ore is believed to be of much lower grade. The deposit on Knight Island has not yet been investigated by the Geological Survey, and consequently there is no authentic information regarding it.

GERMAN AND BOLVIAN TIN.

German interests in the tin-mining industry of Bolivia do not constitute more than 5½ per cent of the whole, or, say 1,700 tons out of the total production of Bolivia for 1918 of 28,500 to 29,000 tons of pure tin. The seven principal mines, which turn out an aggregate of 25,700 tons of the pure tin, are non-enemy. The estimated production for 1918 is: Non-enemy mines, 25,768 tons; enemy mines, 1,700 tons; other small mines, 1,523 tons—total, 29,900 tons of pure tin. Percentage of enemy production to the whole, 5¼ per cent. The Bolivian Government statistics take an average of 60 per cent tin contents as a basis for their calculations. The best opinion, however, now places the average for Bolivian ores at 62 per cent; and both the Llallagua (70 per cent to 71 per cent) and the Patino (65 per cent) mines are increasing their output.

BUSINESS AFTER THE WAR.

A special committee appointed by the Birmingham (Eng.) Chamber of Commerce to consider the question of financial risks attaching to the holding of trading stocks after the war makes the following suggestions:

(a) A certain amount of control as regards the price and distribution of materials and commodities will be desirable and necessary at the close of the war, but should be withdrawn at the earliest possible moment.

(b) Treasury restrictions on the issue of new capital should be removed.

(c) Further state aid or intervention in regard to credit facilities is not recommended.

(d) Dividends should not be limited.

(e) Anti-dumping legislation should be enacted.

(f) Customs duties should be imposed upon imports of manufactured and partly manufactured articles from all countries, subject to any special arrangements between the units of the British Empire and reciprocal treatment between the United Kingdom and its allies and any other foreign countries.

(g) A certain portion of the excess profits duty now taken by the Government should be earmarked and placed to reserve for the purchase and holding of trading stocks after the war.

(h) Repayment of excess profits in recoupment of later losses of deficiencies, should operate over a period of at least four years instead of two years as at present.

New Alloys for Anti-Friction Metals.

From the French Ministry of Blockade and of Liberated Regions, the Bureau of Foreign and Domestic Commerce has received an interesting report on French experience with new alloys for anti-friction metals, to take the place of compounds in which copper, bronze, tin, lead and antimony were essential parts. Different alloys have been made with bases of aluminum, cadmium, magnesium and especially of zinc. The alloy which has given the best satisfaction has the following composition: Zinc, 63.3 per cent; tin, 21.3 per cent; lead, 12; copper, 3.3 per cent;

AMONG THE PLUMBING AND HEATING CONTRACTORS

Illinois

Chicago and Vicinity.

E. Baggot Co., of 17 East Lake Street, has been awarded the contract for the installation of the plumbing system in a suburban and passenger station to be erected on Fifty-third Street, east of Lake Park Avenue, at a cost of $100,000.

Schampel & Dougherty, of 173 West Washington Street, will install a steam heating system in a department store, to be built at a cost of $20,000, at Archer Avenue and Forty-second Street.

Marcus Weil, of 105 North Clark Street, will install modern plumbing in a store, office and loft building, to be erected at a cost of $70,000, at 3244 West Twelfth Street.

O'Callaghan Bros., of 157 North Market Street, have secured the contract to install plumbing in a factory, to be constructed at a cost of $75,000, at 1410-28 Wrightwood Avenue.

The Roberts Plumbing Co., of 4544 North Western Avenue, has been awarded the contract for the installation of modern plumbing in a building of twelve apartments, to be erected at a cost of $36,000, at 1117-1121 Granville Avenue

E. C. Oakes, of 3634 Fullerton Avenue, will install the plumbing in a church, to be erected at a cost of $25,000, at Highland and Paulina Avenues. Martin C. Opsahl, of 1478 Catalpa Avenue, will install the heating system.

Charles C. Bryer, of 1545 West Division Street, has been awarded the contract to install plumbing in an addition to a factory, to cost $13,000, on Dayton Street near Blackhawk Street.

J. E. Monks, who has been engaged in the plumbing business at 60616 Wentworth Avenue, for some years, has closed his shop temporarily in order to serve Uncle Sam as a plumber in a cantonment in the South. Mr. Monks expects to reopen his place of business after the readjustment of general business conditions.

Fred Grosch, of 2745 Armitage Avenue, his wife and daughter, are enjoying the cool altitudes of Colorado, where they are spending a vacation. Their tour will embrace a visit to Pike's Peak, the Garden of the Gods, Denver, Colorado Springs and other points.

Chicago North and Northwest Side Master Plumbers' Annual Outing.

Approximately three hundred persons attended the annual outing and picnic of the North and Northwest Side Master Plumbers' Pleasure Club, held on Saturday, August 10th, at Kolze, Ill., which has been the place where past events of this kind have been given.

Although lowering clouds prevailed during the morning, the weather finally cleared and sunshine enhanced the afternoon hours. Practically all who attended the outing motored to the grounds.

David Whiteford, Rupert Coleman, C. J. Herbert, Charles C. Breyer and George Franklin, well known veterans of local plumberdom, were among those who attended the picnic.

Dancing, baseball and races were among the recreational features of the day.

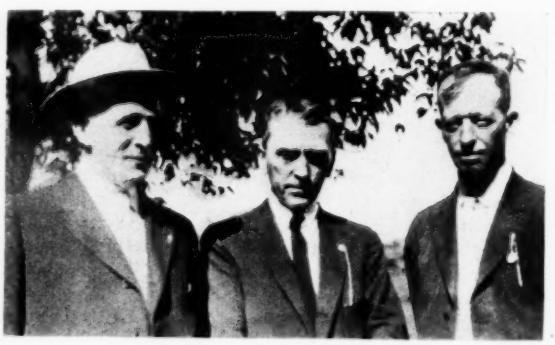
E. C. Wagner, who was chairman of the arrangement committee, was on the job as usual, brimful of his irrepressible "pep" and genialty.

The races, which are always an exciting and amusing phase

Mr. and Mrs. Rupert Coleman and Their Daughter Bessie, at the Chicago North and Northwest Side Master Plumbers' Outing.

of the club's picnics, were scheduled for 4:30 p. m. The judges were C. J. Herbert, David J. Hickey, Charles A. Dreier, and Joseph W. Cannon, president of the Chicago Master Plumbers' Association. The first-prize winners of the various races were:

Peter Sieveny, in Race for Boys under five years.
Miss Bernice Wiggins, in Race for Girls under five years.
Joseph Ostrander, in Race for Boys under eight years.
Miss Virginia Khym, in Race for Girls under eight years.
Luke Keefe, in Race for Boys under twelve years.
Miss Mary Krelly, in Race for Girls under twelve years.
Wm. Slater, in Race for Boys under sixteen years.
Miss Gladys Adams, in Race for Girls under sixteen years.
Roy Hickey, in Race for Boys over sixteen years.
Miss Hattie Loges, in Race for Girls over sixteen years.
Mrs. W. E. Bahn, in Young Married Ladies' Race.



J. F. Ratcliffe, J. V. Cole and L. J. Keefe, at Chicago North and Northwest Side Master Plumbers' Outing.

Wm. E. Bahn, in Young Married Men's Race.
Edward Lagodzinski, in Master Plumbers' Crab Race.
Mrs. Perry Russell, in Race for Plumbers' Wives.
Wm. Gawne, in Sack Race.
Miss Ethel Kalb, in Ladies' Egg Race.
Mr. and Mrs. T. W. Eckhart, in Married Couples' Race.
Joseph W. Cannon, in Master Plumbers' Race.
Attractive prizes were awarded to the winners of the races.

Thomas Dwyer, Jr., Mrs. and Mr. M. Dwyer, Mrs. J. Christy, and Thomas Dwyer, Sr., at Chicago North and Northwest Side Master Plumbers' Outing.

The commissary department of the picnic grounds was an important and congested place. Refreshments, including ice cream, were served gratis during the day.

Michigan

Detroit and Toledo Master Plumbers Hold Joint Outing and Picnic.

The Master Plumbers' Associations of Detroit and Toledo, augmented by many journeymen plumbers and fitters from both cities, held a successful outing and picnic at Sugar Island Park, Mich., on Saturday, August 10th.

The plumbers and journeymen, hailing from both cities, sailed with their families and friends on the large and luxurious steamships, which ply between Detroit and Toledo, on the Maumee River. The vessels carrying the merry parties were specially chartered for the occasion.

Approximately 2,350 persons attended the picnic. Luncheon was served under the shade of stately maple trees, soon after the picnickers disembarked.

Dancing, baseball, races and other outdoor sports were features of the entertainment program. The morning baseball game between the Detroit Masters and their Journeymen was won by the latter, the score being 12 to 13. The afternoon game between the Detroit Masters and Journeymen and the Toledo Masters and Journeymen, was won by Detroit—score 1 to 0. The game was a closely contested one, with all kinds of star plays on both sides.

Detroit and Toledo Plumbers' Baseball Teams in Sugar Island Park, August 10, 1918.

The afternoon field contests aroused much interest and amusement. The winners of the different races were awarded attractive and valuable prizes.

The supply fraternity was well represented at the outing.

The judges who officiated at the races were: Robert Wright, W. G. Wacker, A. F. Keveney, of "Domestic Engineering," F. J. Murphy, N. S. Larson, W. H. Bolly, C. E. Boughton and Walter H. Dougherty. James Cartz, of Detroit, presided as starter.

Indiana

Indianapolis and Vicinity.

The Superior Plumbing Co., of 3339 Central Avenue, Indianapolis, has received the contract to make extensive alterations in the plumbing and heating systems in a township school building at Nora, Ind.

The William H. Johnson & Sons Co., of 330 East St. Joseph Street, Indianapolis, has been awarded the contract to install heating systems in the two new factory buildings that are to be erected at Anderson, Ind., for the Remy Electric Co.

Other Cities in the State.

John Ford, of 3420 Grapevine Avenue, Indiana Harbor, has been awarded the plumbing contracts of two new bungalows that are to be erected on Euclid Avenue.

B. Schreiber, of 3406 Elm Avenue, Indiana Harbor, was the successful bidder for the plumbing contract on four bungalows that are to be erected in that city.

Thomas Sullivan, of 120 West Taylor Street, Kokomo, has been awarded the contract for the installation of plumbing in the new $25,000 addition to the Kokomo Rubber Company's factory and office building on South Main Street.

W. Zimmerman, of Whiting, has received the plumbing contract on the new $26,000 dairy building that is to be erected at East Chicago, Ind., for the Allen & Youngren Co. He also has the contract for the installation of plumbing in the new $20,000 store and office building that is to be erected at Whiting for John Manta.

M. J. Daily, of Hammond, was the successful bidder for the plumbing contract on the new $6,000 bungalow that is to be erected on Baring Avenue, in East Chicago, Ind.

The plumbing contract on the new $150,000 apartment building that is to be erected in East Chicago, Ind., for Andres Wickey, has been awarded to Abraham Ottenheimer, in that town.

John Allen, of Newcastle, has received the contract for the installation of the plumbing and heating systems in a new $20,000 residence for W. P. Jennings.

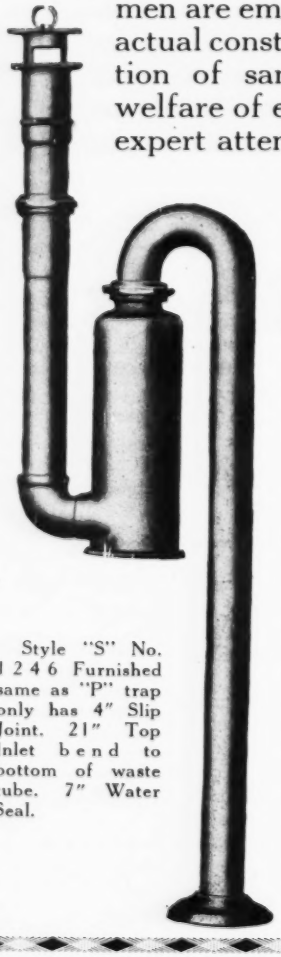
Powell & Dorste, of Anderson, have been awarded the contract for the installation of modern plumbing in the Remy Electric Company's two new factory buildings.

Wm. C. Whitehead & Sons, of 610 Broadway, Logansport, report an exceptionally busy season. They have just completed the installation of plumbing in a two-flat building on West Broadway, and in a similar building on East North Street, and they are now installing modern plumbing in Chas. Dehaven's new residence on East High Street. This firm also recently secured the contract for plumbing in three residences on East Spear Street and in the Tipton School in Logansport, the latter contract amounting to $4,000.

There Is a Reason Wh
WISECO Sanita

WISECO Products were adopted for use in the buildings at the Hog Island Shipyard because they conform to the rigid specifications required for all products entering into government construction work.

In this modern industrial city, approximately 26,000 men and 650 women are employed. In addition to actual construction work, the question of sanitation, housing, and welfare of employes have received expert attention.



Style "S" No. 1246 Furnished same as "P" trap only has 4" Slip Joint. 21" Top Inlet bend to bottom of waste tube. 7" Water Seal.

Build Bigger Business Wit

You can be assured of building up a satisfactory clientele now and for e you and make every installation give first-class service. This follows a

THE SENECA Non-Syph

has proved its superiority by actual service. Tested and approved by Boards

Accurate in every detail. Body is 7 in. long, 2⅝ in. diameter with removable bo it a rotary or cleansweep motion. This, together with the perfectly smooth finish si

All tubing 1¼ in. diameter, No. 18 gauge. Inlet 1¼ in. Ground seat on wa e. any length, and any length slip joints.

WISECO Plumbers' Sanitary Brass Goods include a com et and Overflows for Basins and Baths, Lavatory Trimmi

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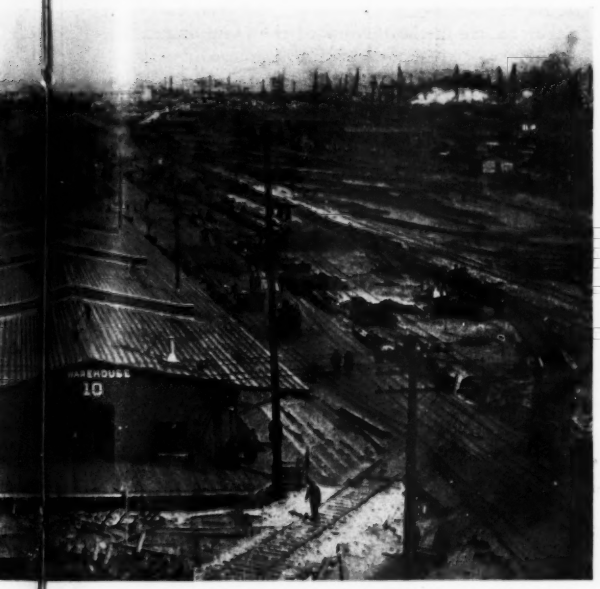

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Big Shipyard Going at High Speed to Build Ships for the American Government

A general view of the seething activity at Hog Island where the steel ships are rapidly nearing completion, that will help keep our bridge to France unbroken.

The plant, covering a 2,000-acre plot is now more than 80% finished and will have 50 ways when completed. It is estimated that at this shipyard, easily the largest in the world, a ship will be launched every two days when it is in full swing.

ith WISECO Products

l for e future if you stand by the goods that will stand by ws as a natural result wherever WISECO Products are used.

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rds of Health as a strictly sanitary trap.

ovable bottom. Water enters body at one side of center, thus giving inish inside, makes it impossible for anything to lodge in trap.

n wa e. Can furnish any size offset required, also any gauge tubing

com ete line of high grade Traps, Wastes mmi , etc. Your jobber can supply you.

Watertown, N.Y.

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Style "P" No. 1242 furnished regular with 2¾" 14 Gauge, wrought P. O. Plug, 6" Slip Joint, Cast Nuts, Heavy 3" .017 Flange.

12" Center Inlet to end of wall tube.

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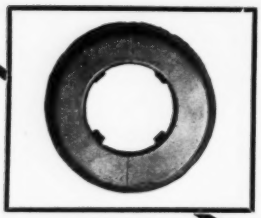

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is a heavy stamped steel plate substantially constructed. It is nickeled on copper and highly polished.

Made in all sizes from ⅛-inch to 3 inches.

It may be cut to fit any condition. Can't break and will stay where it is placed.

The design is handsome and the finish cannot be equalled by any other plate on the market.

Ask for full details, prices, etc.

W. A. RUSSELL & COMPANY
63 W. 37th Street
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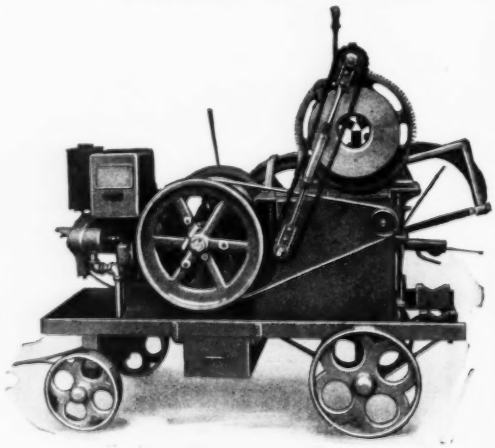
A Sure Winner



Columbus Portable Pipe Machine, Type O

Goes right on the job and does the work you are now getting done by two to four men.

Is absolutely self contained.

Cuts and threads pipe just as measurements are made and pipe installed

Cuts right hand 1 in. to 6 in. Left hand, 1 in. to 2 in.

Also attaches and drives to any geared or ratchet die-stock you may now have.

Width, over all, 2 ft. 6 in.

For prices see your jobber or write

Columbus Machine Works, Columbus, Ind.

Georgia

Atlanta and Vicinity.

A. J. Mendenhall, of Atlanta, president of the Georgia Master Plumbers' Association, has appointed James E. Belcher, 24 South Pryor Street, Atlanta, as secretary of the State Association.

John H. Lynch, of 53 East Hunter Street, Atlanta, has found it necessary to rent the store adjoining his establishment, and use it for storage purposes. Mr. Lynch has several good contracts on his books, including the installation of modern plumbing in a thirty-nine-apartment building, if he can secure the necessary material to do the work. Never before in the history of the plumbing business has the little word "if" occupied so important a place in contracts as now. Mr. Lynch is also doing the plumbing and heating in Repair Unit No. 305 at Fort Jessup.

The Central Georgia Plumbing Co., of Macon, has secured the contract for the installation of modern plumbing in a cotton mill near Covington, Ga., and for the construction of a sewage disposal system in connection therewith. The contract amounts to $30,000.

Smith & Guest, of 40 Luckie Street, Atlanta, are installing plumbing and heating systems in Camp Gordon, and in Camp McClellan, Ala. At Camp Gordon, they are installing fifteen 150 horsepower high-pressure boilers to heat officers' quarters and the base hospital from one central power plant. The heating system in the hospital building alone will require 45 miles of pipe.

The Gresham-Jackson Co., of Atlanta, will install the heating plant in the natatorium at Porterdale Cordage Mills, the heating system in the Presbyterian Church at Covington, and plumbing and heating systems in two garages in Atlanta.

The Boatenreiter Plumbing Co., of Atlanta, will install modern plumbing in the Salvation Army headquarters and in several small flat buildings.

The J. B. McCrary Co., of Atlanta, will install plumbing, water supply and sewage disposal systems at Scottdale Mills. The contract amounts to $40,000.

Pennsylvania

Pittsburgh and Vicinity.

Considerable optimism has been injected into the local situation with regard to building and contracting by the announcement of Gilbert F. Myer, county commissioner of Allegheny County, that the government is about to inaugurate an investigation in the Pittsburgh district as to housing needs. Commissioner Myer, who is also extensively connected with building and contracting interests, has just returned from Washington, D. C., where he held conferences with officials in the Department of Labor on the question of housing the many thousands of families that have come into the district to work in plants making munitions and other war materials. He told the officials among other things that 2,000 houses are needed at once in various parts of the county, especially McKeesport and Pittsburgh. The commissioner says he was given assurance that the inquiry would be undertaken by the department without delay and that building probably would be commenced within a few weeks.

Paul G. Cass, of the E. F. Cass Plumbing Co., Pittsburgh, has gone to New York where he will report to

the headquarters of the Gas Service Corps, in which he has enlisted. Mr. Cass expects to go overseas soon.

H. Marks & Sons have the contract for furnishing all material and work for the installation of the plumbing system in the new Jewish Home for Babies, a two-story brick and attic house on Breckenridge Avenue.

Contracts for extensive alterations to a building at 225 Fifth Avenue, including plumbing, heating and ventilating, will be awarded soon by the F. Hoffman Co.

Philadelphia and Vicinity.

L. Wanner, of this city, has been awarded the contract for the installation of plumbing and heating in a building being erected in the Camp Ship Yards.

H. L. Roberts, of this city, has been awarded the contracts for installing the heating system in a new building for Dr. Woods. The contracts amounts to $1,800.

F. G. Voegele, of 2116 Columbia Avenue, has secured the contract for the installation of plumbing in a number of bungalows being erected in Clementon, N. J.

New Jersey

Newark and Vicinity.

The Newark Association of Master Plumbers at a recent meeting decided to forego the usual outing this year. This is no indication that the social spirit of the association is waning. It is purely a war measure to help conserve the food of the nation and otherwise contribute toward the national war thrift spirit.

The Newark Board of Health will, however, hold its annual outing, in which the plumbers will undoubtedly take the usual representative part. This will take place on Wednesday, August 21st, at Clinton Place Park, Clinton Place. A feature of the day's sport will be a baseball game, and Edward Sternkopf has been delegated as captain to recruit a plumbers' team to meet the plumbing inspectors. Charles F. Conrad is chairman, and William H. Young, secretary of the department's committee on arrangements.

Other Cities in the State.

Reuker Bros., of Jersey City, have secured the contract for the plumbing in the new Hudson County Hebrew Orphans' Home at Stevens and Fowler Avenues, Jersey City.

The Jackson Plumbing Co., of Jersey City, will do the plumbing in a new apartment building at 2688 Boulevard.

Murphy Plumbing Co., of Jersey City, has secured the contract for the plumbing work in the Union Cold Storage Co.'s new terminal on Provost Street, and in Swift & Co.'s new plant at Orange and Plain Streets.

Knight & Burn, of Bayonne, are installing the plumbing work in the National Sulphur Co.'s factory addition.

Newall & Shillowitz, of Bayonne, have the plumbing contracts on a number of apartment building operations under construction, among them one at 77 Fairview Avenue, for H. J. Man, and another on Fairmont Avenue, for Chas. Levine.

David Hardman, of Bayonne, is doing the plumbing work in a new apartment building for the Glen Rock Construction Co., at Hyland Avenue and the Boulevard, and in another at 168 Clinton Avenue, Jersey City.

George Grossman, of Jersey City, has been kept busy with new apartment work, in spite of the diminished building activity. Some jobs under way are: An apartment building at 150 Belmont Avenue, for the Katz Building Co.; one on Glenwood Avenue, for A. Boorstein; one at Summit Avenue and Gardener Street, for H. Uslan, and one for James Billington, on Magnolia Avenue.

Value Received

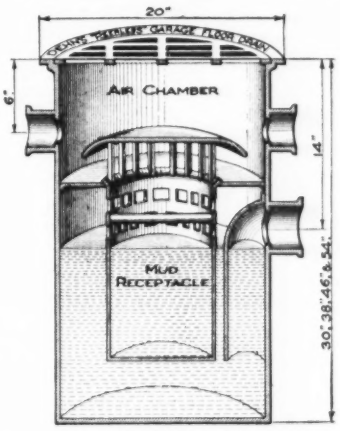


Fig. 62 Patented

When you install Dehn's "Peerless" Garage Drains your clients never stop talking about it. A wonderful installation. Value received.

1897 — 1918

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Originators, Designers and Sole Manufacturers of Dehn's Sanitary Safeguards

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Don't Let This Business go out of town

Scores of farmers in your locality are in the market for a Private Water System. They have the money and mean to buy—somewhere and soon. Don't let this easy, profitable business go to the mail order house. Get it yourself by taking the agency for the

Milwaukee Water System

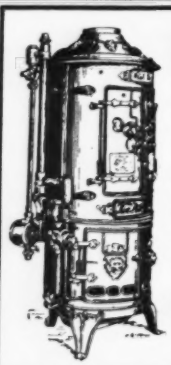
This system gives the farmer exactly what he wants and needs—absolutely fresh water direct from the well, in the quantity needed and when and where needed.

Simple, dependable, easy to install; equipped with a full line of pumps for deep or shallow wells. Hundreds in use on farms, in country homes, schools and institutions. Find out about it—*now.*

The Milwaukee Air Power Pump Co.

832 Third Street
Milwaukee, Wisconsin

The Agency for the Milwaukee Water System is worth from $1,500 to $5,000 per year to live dealers. Write for particulars—today.



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Special sales helps for those who want to get ahead.

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PITTSBURGH, PA.

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Type F 2-inch for Hot Water Boilers

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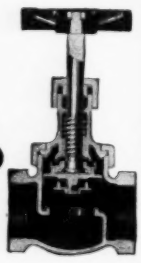
UNION BONNET
DOUBLE SEAT
VALVES



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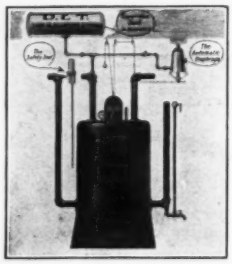
D & T Tank-in-Basement System
Saves 25% on Coal Bills



It is the most economical and efficient method of Hot Water Heating known. It will save your client money on the purchase of equipment, the installation and up-keep.

Over 35,000 D. & T. systems now in use.

Write for Booklet "Progress in Hot Water Heating."

D & T Manufacturing Co.
1907-09 Pine Street
St. Louis, Mo.

Massachusetts

Boston and Vicinity.

Members of the Master Plumbers' Association of Boston and Vicinity and representatives of Boston jobbing houses held a joint outing at Nantasket Beach on Wednesday, August 14th. The party spent the afternoon and evening at the beach, some making the trip by automobile and others by boat. After a dinner at Villa Napoli the afternoon was devoted to short talks by manufacturers, wholesale jobbers and others on trade subjects. A fuller report will be given next week.

M. F. Doherty, of Holyoke, has been awarded the contract for plumbing in the new nurses' home for St. Luke's Hospital in Pittsfield.

Plans for the mid-year meeting and outing of the Massachusetts State Association of Master Plumbers, to be held on August 21st at Webster, are rapidly taking form, and Secretary James H. Trow, of Salem, reports prospects for a good attendance. Several business matters will be taken up at the meeting. Master plumbers from all parts of the state have been invited to attend and learn of the value of membership in the association.

Oregon

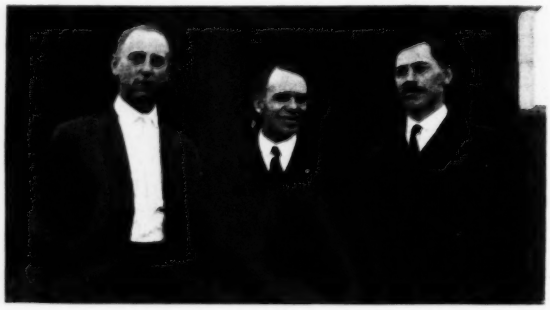
Portland and Vicinity.

S. A. Murhard, vice-president and treasurer of the Muirhead & Murhard Co., of Portland, is confined to his bed with an attack of pneumonia. His many friends are wishing him a speedy recovery.

Ray Graham, of 751½ Washington Street, Portland, is remodeling the plumbing and installing new fixtures in the Portland Academy. Mr. Graham reports business fine and he adds that he is following the advice of the Trade Extension Committee and deriving great benefit therefrom.

E. H. Sutton, of 1041 Belmont Street, Portland, has been awarded the contract for the installation of modern plumbing in a flat building, which will soon be built at Thirty-seventh and East Stark Streets.

W. T. Finnigan Co., of Portland, will install plumbing and heating systems in ten wooden ships, being constructed in Portland shipyards, for the U. S. Merchant Marine.

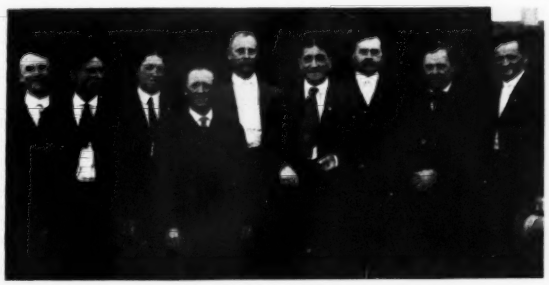


Three Portland Master Plumbers: W. T. Finnigan, Member of the State Board; Chas. Fullman, President, and T. J. Rowe, Secretary; All of Oregon Master Plumbers' Association.

Eugene Ruedy, of 200½ Washington Street, Portland, will install the plumbing in the Manual Art School at Vancouver, Wash. Fox & Co., also of Portland, will install the heating system in this building.

C. J. Kelly, of 1259 Belmont Street, Portland, will install plumbing and heating systems in an 18-apartment building, which will soon be built in this city.

Sturges & Sturges, of 443 Washington Street, Portland, are installing plumbing and drainage systems in a number of ships being built by the Sommarstrom Shipbuilding Co. for the United States Emergency Fleet. This firm will also install the plumbing on Pier No. 1, St. John's Terminal, now being constructed by the Public Dock Commission of Portland.



Some of the Members of Portland Master Plumbers' Association.

The plumbing and heating firm of Fraser & Pratt, at Salem, has been dissolved. A. L. Fraser has purchased his partner's interest and will in the future do business under his own name at the old stand, 454 Ferry Street. E. O. Pratt, the retiring partner, has accepted a position as foreman at one of the large shipyards in Astoria.

Architects Tourtellotte & Hummer, McKay Building, Portland, are preparing plans for a theater building to be erected at Enterprise. The structure is to be three-story, 60x120 feet, and have a seating capacity of 500.

E. J. Conkelman, a plumbing and heating contractor of Enterprise, Ore., has enlisted in the United States Army.

Minnesota

Minneapolis and Vicinity.

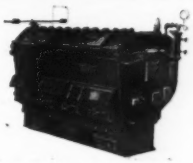
Fred Muralt, a master plumber, has disposed of his stock of goods and place of business and has left for the Coast to work in the shipyards during the period of the war at least.

Three Minneapolis plumbing contractors have joined hands on a co-operative basis. They are G. E. Simonds, B. Hotchkiss and C. V. O'Reilly. Their former places of business were very close together, two of them have been closed and they now occupy one store and are able to save the overhead expense of the two stores, which have been closed.

Richard H. Fields, formerly office man for the Hughes Heating & Plumbing Co., and now on the U. S. S. Arkansas, has just written his former employers to let them know that he is "on the other side." He adds that he "will send a Hun for a souvenir as soon as he can catch one."

M. J. O'Neil, of St. Paul, has the contract for installing the plumbing and heating in the Women's Reformatory Building, now being erected by the state of Minnesota at Shakopee. Consideration, $20,000. He will also install the plumbing in the addition to the main building at the State Insane Asylum at Anoka.

The plumbing in the new hotel at St. Cloud will be installed by J. P. Bisenius, of that city, and the heating by



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This is a
Pierce Down Draft, Magazine Feed, Smoke Consuming, Heating Boiler
Saves Fuel Labor
Manufactured only by
PIERCE, BUTLER & PIERCE MANUFACTURING CORP.
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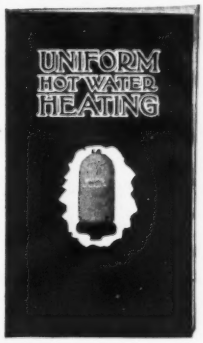

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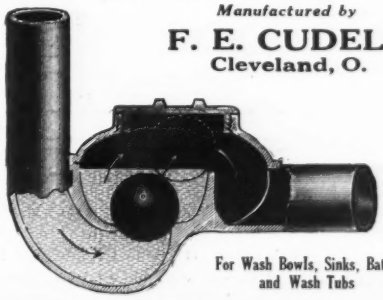
It tells you all about the
Ball Seal Generator
for Hot Water Heating.
This generator increases circulation and radiation. Prevents sluggish, water-logged conditions. Reduces fuel cost. Operates without noise. No attention needed.
Just what you want for that next job.
The Ball Seal Generator Co.
Easton, Pa.

LEAD TRAPS
Manufactured by
F. E. CUDELL
Cleveland, O.



Patent Sewer Gas and Back Water Trap
in P. S. R. Bath
For Wash Bowls, Sinks, Baths and Wash Tubs

Building Bigger Business
Requires hard work on your part.
Don't lose trade by using inferior products.
Haydenville Products
are "Trade Builders"
Use Them
THE HAYDENVILLE COMPANY
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Cleveland Flush Valves
Simple Sanitary Satisfactory
Designed for general use, and especially where hard usage is unavoidable. Lever or push button action.
Write for our Special Sample Valve Offer.
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No. 2A Thermostat
ROBERTSHAW MFG. CO. YOUNGWOOD, PA.
The standard for 30-40 gal. boilers, and single coil heaters or equivalent. Has ¾-in. gas openings.
We Make All Sizes

Pressweld Radiators
Save 15% on Fuel
It is your patriotic duty to install them. They are light, compact, quick-heating and save space. Can be hung on wall.
Used by U. S. Government. Write for new catalog.
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ALLEN FLUX
NON-ACID FOR SODERING
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—Non-Acid Flux. For Soldering—Anything—Any Metal to any Metal.
Makes joint three times as strong as muriatic acid flux. Only soldering flux approved by National Board of Fire Underwriters.
In four forms—stick, paste, salts, liquid. Samples Free.
LLEN CO., Inc., 4526 N. Lincoln St., Chicago
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UNCLE SAM has tested our
STANDARD PORTABLE VISE BENCH AND PIPE BENDER
and same has proved satisfactory. HE is now one of the THOUSANDS of satisfied users we have. Drop us a line and we will send you full particulars, or ask your jobber for same.
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"HAAS" WATER CLOSETS
are high grade, insuring maximum service and minimum expense
PHILIP HAAS CO., DAYTON, OHIO

"Femco" **Fittings**
Goods that make good *Quality first, last and always*
We make a complete line of Plumbers' Brass Supplies for all requirements. Write for prices.
Frost Manufacturing Co. Kenosha, Wis.

DESOLVO Clears Clogged Pipes
The Original and Only pipe cleaner that can be used successfully with Cold water.
Used by progressive plumbers everywhere.
Order from your jobber.
The Chamberlain Company
Manufacturing Chemists Pittsburgh, Pa.
K-K Cleans closet bowls "the sanitary way."

C. E. Hasey, of Minneapolis. Plumbing, $16,275; heating, $19,975.

B. N. Nelson, of Minneapolis, is just completing the plumbing in the new Shaw Hospital at Buhl. He also has the contract for the plumbing in the residence being built by Dr. Shaw in the same city. A. B. Donaldson, of Minneapolis, has the heating contracts. Mr. Nelson is fortunate in having a great many plumbing contracts and is one of the busiest plumbers in the Twin Cities.

Frank Eha, of St. Paul, has the contract for the installation of the heating plant in the laundry building, now being erected at St. Raphael's Hospital, St. Cloud.

Healy Plumbing & Heating Co., of St. Paul, has been awarded the contracts for the installation of plumbing and heating systems in the new school at White Bear.

Otto F. Kohl, of Minneapolis, is back in the game again after a vacation spent in the hospital, followed by several weeks on the farm. He is doing the plumbing in the old Daily News Building at Second Avenue South and Sixth Street, which is being remodeled into stores and offices.

John A. Shogren, of 1430 West Thirty-first Street, is installing a vapor heating system in the new warehouse, being erected by the C. W. Lundquist Co., at 1226 Quincy Street, Northeast.

H. C. Ridler, of 3248 Pleasant Avenue, Minneapolis, is installing the plumbing and heating in the addition now being built for the Brown & Bigelow Co., at Midway.

The city of New Ulm has awarded the following contracts on its new city hall: Plumbing, heating and ventilating to P. J. Gallagher, of Faribault; and underground steam piping to Belden-Porter-Gray Co., of Minneapolis. Bids were $15,630 and $4,427 respectively.

The following contracts have been awarded for the Junior High School at Virginia: Plumbing to Stack Bros., of Duluth, at $72,338; vacuum cleaning equipment to the same concern at $7,877. About $17,000 additional will be spent on pipe covering.

Connor Bros., of Minneapolis, have been awarded contracts for the plumbing and heating of a 24-apartment building to be erected at 214 Oak Grove Street.

Hankee Heating Co., of Minneapolis, has the contract for installing the heating plant in St. Luke's Church, now being erected at the corner of Summit and Lexington Avenues, St. Paul.

Prendergast Bros., of St. Paul, are remodeling the plumbing in the building at Seventh and Cedar Streets

A recent ordinance of the city of Minneapolis, requiring a yearly license fee of $35 from master plumbers, has been amended to $10, the result of a protest by a number of the trade who felt that the original amount was too large. At $10 the revenue to the city will be very small, as many of the master plumbers are closing their shops due to the small amount of business available. Coupled with the fact that there is a big demand for men in the ship yards at good wages, it is easy to see why so many men are leaving the business, with its uncertainties and worry, to take up work which insures a pay envelope every Saturday night.

Alonzo A. Budd, of Austin, will install the plumbing in the new freight house and office now being built in that city for the Chicago, Milwaukee & St. Paul Railway.

To Try Out The Dog.

"Come on in the yard," said the farmer in response to the soldier who had asked for a drink of water.

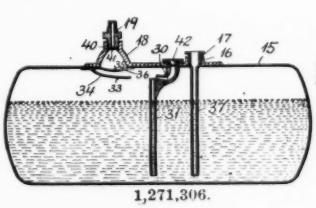
The soldier eyed the bull dog dubiously. "But say," he said, "how about that dog? Will he bite?"

"Dunno," said the farmer, "just got him today and that's what I want to find out."—Exchange.

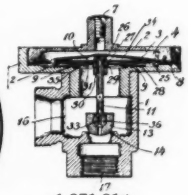
Patents

Heating Department.

1,271,306. Air Moistening Device. David J. Fox, Boston, Mass. An air moistener for an internal combustion engine, comprising a water reservoir, a suction pipe having its receiving end connected with the upper portion of the reservoir and its delivering end connectible with the engine, an atomizing air conduit extending through the upper wall of the reservoir and open to the atmosphere, said conduit having a delivering portion located above the water space in the reservoir, a water conduit associated with the atomizing conduit and having its receiving end in said water space, and its delivering end above said space and in the path of air delivered by the atomizing conduit, and an auxiliary air conduct extending through the upper wall of the reservoir and open to the atmosphere, the aggregate conducting capacity of the atomizing and auxiliary conduits being greater than the conducting capacity of the suction pipe, so that sufficient air is admitted to insure the presence of air at atmospheric pressure in the reservoir, and a reduction of the cross-sectional area of the atomizing conduit, to cause an efficient atomizing action, is permitted.



1,271,306.

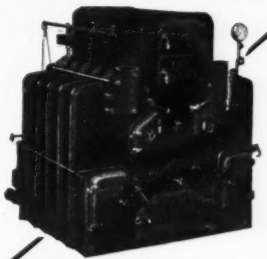


1,271,212.

1,271,212. Valve Device for Use in Heating Systems. Andrew G. Paul, Boston, Mass. In a valve device for use in heating systems, the combination of a chamber for an expansible fluid, the outer wall of said chamber being adapted to be exposed to the temperature of the room to be heated, the inner wall of said chamber consisting of a movable diaphragm adapted to be exposed to the temperature of the fluid passing through said valve device on the inlet side of the valve proper, the casing of the valve device being provided with a surface to act as a stop to limit the motion of the diaphragm toward the valve seat, a valve proper adapted to be moved by the diaphragm and a seat for said valve.

1,271,734. Wrench. Theodore W. Little, Brookline, Mass., assignor to Walworth Manufacturing Co., Boston, Mass., a corporation of Massachusetts. In a wrench, the combination with a main shank carrying a jaw, a threaded movable shank carrying a jaw, a housing embracing said shanks and pivoted to the main shank and an adjusting nut engaging the movable shank and mounted in the housing, of a pair of rigid arms on the jaw of the main shank extending well over the movable shank and directly abutting the housing in front of the nut whereby to limit the rocking movement of the housing on its pivot and take up directly the pressure of the nut in operation and prevent lateral rocking or twisting of the housing with respect to the main shank.

1,271,587. Humidifier for Heating Plants. Henry Kraker, Holland, Mich. In a humidifier, the combination



The Newport

The Magazine Feed Boiler with the Adjustable Throat

The Patriotic Boiler

This year home owners will be forced to take various sizes and kinds of fuel—pea and buckwheat along with cheatnut, range and egg. Also noncaking nut soft coal. The Newport is the only boiler which burns efficiently all these sizes and kinds—separately or mixed. Thus your customers are safe, for unusual fuel conditions are overcome. Send for "Newport Heating" document.

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107 South Dearborn Street Chicago

AN HISTORICAL ANCESTRY

LOOK FOR NATIONAL THE NAME

¶Before the invention of power-driven machinery man's work, either in industry or the arts, was individual.
¶When a man was proud of his work, he placed on it an identifying mark. This was the "ancestor" of the name "NATIONAL", rolled in raised letters on "NATIONAL" Pipe.
¶Did you read THE IDENTIFYING MARK (page 631) of the August 3rd issue?

NATIONAL TUBE COMPANY, Pittsburgh, Pa.

WROUGHT IRON STRAPS

Scientific construction makes these straps stronger, lighter, better in appearance.—MORE PIECES TO THE POUND—Consequently lower in price.

Write for Prices

BERGER BROS. CO.
229-231-237 Arch Street
PHILADELPHIA

ELECTRIC HOUSE PUMPS · Dayton · WATER SUPPLY SYSTEMS

Suction Pumps *and* Complete Water Supply Systems

pumping capacities 120 to 1,600 gallons per hour. Efficient Deep Well Pumps with Hyatt Roller Bearings and silent chain drive, pumping capacities 150 to 2,000 gallons per hour. **Write for bulletins and price sheets.**

The Dayton Pump & Manufacturing Co.
DAYTON, OHIO New York, N. Y., 30 E. 42d St.

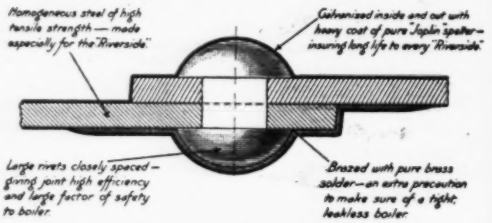
PORTABLE SHOWERS
SPECIAL PRICES IN DOZEN LOTS
SHOWERS OF ALL DESCRIPTIONS
GOETZ BRASS COMPANY
630 N. FRANKLIN ST. CHICAGO, ILLINOIS

WE BUY
Iron Pipe Couplings
SPOT CASH

How many, either pounds or pieces, have you of various sizes?

GWILLIAM SUPPLY COMPANY
615 Christian Street PHILADELPHIA, PA.

The "Riverside" Riveted and Brazed Seam


Homogeneous steel of high tensile strength — made especially for the "Riverside"
Galvanized inside and out with heavy coat of pure "Joplin" spelter — insuring long life to every "Riverside"
Large rivets closely spaced — giving joint high efficiency and large factor of safety to boiler
Brazed with pure brass solder — an extra precaution to make sure of a tight, leakless boiler

The Strongest and Tightest Seam on any Range Boiler

Riverside Boiler Works, Inc.
Cambridgeport, Mass.

Dependable Showers
Easily set for desired temperature.

The Milwaukee Mixer
precludes all danger of scalding.
Made in a variety of designs.
Valve either exposed or concealed.
China or metal handle.
Order from your jobber.

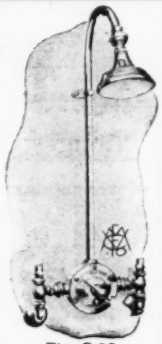


Fig. C 30

The Milwaukee Flush Valve Co.
Valve Specialists MILWAUKEE, WIS.

Wolverine
Nut and Screw Repairs
Will Help You in
"Building Bigger Business"
WOLVERINE BRASS WORKS
San Francisco, Cal. Grand Rapids, Mich.

Time Is Money

It takes time, and a lot of it, to stop and figure out the resale price of each article you handle. Even then there is a chance of making errors so your profits will not come out right.

The Bradford Price Book

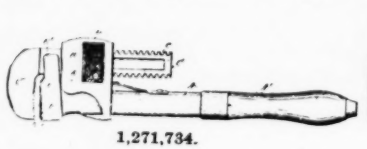
does this work for you quickly and accurately. A glance tells you the List, Net and Resale figures. Size of pages 5 x 9 inches. Bound in flexible, loose-leaf, 4-ring binder.

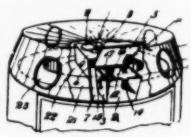
The price is only $12, which is very soon saved in time alone. Send your check for that amount and the book will be sent on 15 days' trial. If not satisfactory you may return it and your money will be refunded.

Write for free Sample Sheets

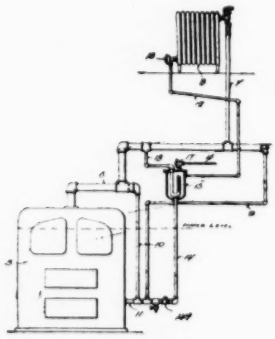
Wm. A. Bradford, 7 Maple Street QUINCY, MASS.

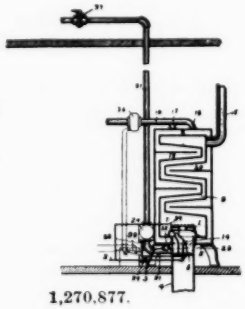
of a receptacle having a bottom, sides and ends, a top covering the major portion of the receptacle but leaving the front portion thereof open at its upper side, said top having an opening therein back of the front opening, a door hingedly mounted and adapted to close the front uncovered part of the receptacle, a shutter pivotally mounted on the cover adjacent said rear opening therein, means connecting the door and shutter for automatically opening and closing the shutter as the door is closed and opened, and means to enter water into the receptacle and hold it at a predetermined level, substantially as described.


1,271,734.


1,271,587.

1,271,658. Vapor-Heating System. John S. Brennan, Milwaukee, Wis. In a pressure controlling mechanism for a vapor heating system including a boiler, a vapor supply pipe, and a return pipe each connected therewith, the combination with a trap chamber interrupting the return pipe, of a thermostatically controlled atmospheric vent for the trap chamber, a vapor condensation drain pipe in communication with the trap chamber and said vapor supply pipe, the vapor condensation drain pipe having an upturned discharge leg within the trap chamber, the outlet of said leg being above its bottom end whereby to normally maintain a column of water in said leg, said column of water being displaced by abnormal pressure in the vapor supply pipe resulting in an equalization of pressure in the vapor supply and return pipes of the system, substantially as described.

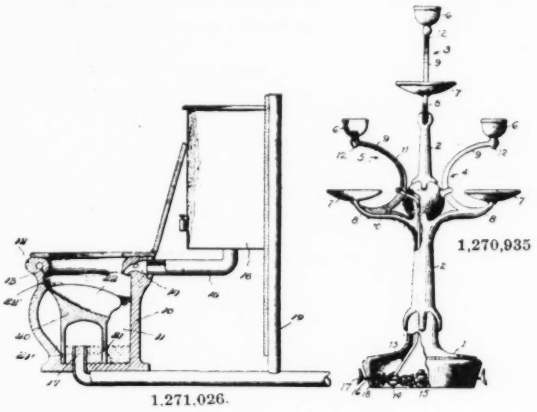

1,271,658.


1,270,877.

1,270,877. Automatic Regulating Device for Heaters. Fred Schulz, Oakland, Cal. An automatic regulating device for heaters, comprising a gas supply pipe, an inlet valve in said pipe, a pipe for the delivery of air for combustion, an air supply valve, a pipe for the delivery of the substance to be heated, a fan placed in said pipe, and adapted to force air through the same, an electric motor adapted to run said fan, an electric switch to control the current to said motor, a pipe for the discharge of the heated substance, a thermostat placed in said pipe and connected to said valves and to said switch, the connection to said valves being so arranged as to increase their openings when the temperature in said thermostat falls, and to diminish said openings when it rises; while the connection with said switch to be such as to close the circuit when the temperature falls to the lowest extreme, and to break the circuit when it rises to the other extreme of the predetermined range of temperatures.

Plumbing Department.

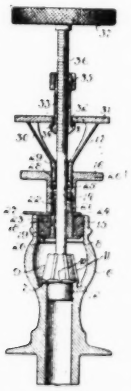
1,217,026. Closet Bowl. Charles B. Freck, Asheville, N. C. A device of the character described including a bowl having a water deflecting shoulder formed in the wall thereof adjacent the upper extremity of the bowl, an outlet pipe projecting through the bottom wall of the bowl, and a bell portion seating upon the said bottom wall over the inner extremity of the said pipe to co-operate therewith and form a trap, the said bell portion being provided with a flange at its upper extremity terminating adjacent the inner extremity of said shoulder whereby water flowing over the said shoulder will be directed onto the upper end of the bell portion.



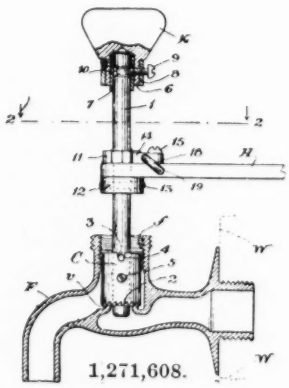
1,270,935

1,271,026.

1,270,935. Water Fountain. José Fernandez, Los Angeles, Cal. A water fountain, comprising a base, a standard, brackets carried by the standard, drink-bowls carried by the brackets, drip-basins below and axially concentric with the drink-bowls, a water supply main within the base, valves and supply pipes forming communication between the supply main and the drink-bowls, and foot pedals to operate the valves.



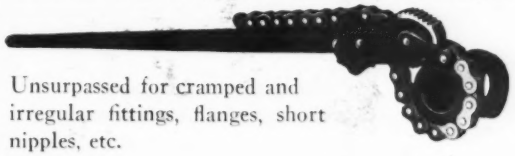
1,271,854.



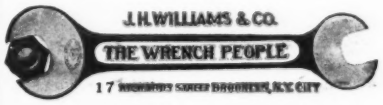
1,271,608.

1,271,854. Tool for Recutting Valve Seats. Howard H. Christensen, Chicago, Ill., assignor to Charles A. Dreier, Chicago, Ill. In a tool for recutting valve seats, the combination of a cutting member, a rod attached to said member, a holder for the rod in which it has a free rotative movement, a plug of expansible and yieldable material arranged to be inserted upon the inside of the open upper end of the valve casing, means forming a part of said holder for expanding said plug to bring it into engagement with the inner wall of said upper end of the valve casing to lock the holder in place, and means forming a part of said holder and adapted by adjustment to mechan-

WILLIAMS' "AGRIPPA"
Chain Pipe and Fittings Wrench



Unsurpassed for cramped and irregular fittings, flanges, short nipples, etc.



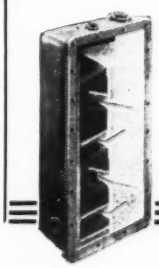
Western Office and Warehouse: 17 South Clinton Street Chicago

UNITED LEAD TIN BRASS **LINED PIPE**

Longest-lived, most economical pipe made. Also "United" acid-proof pipe and fittings.

UNITED LINED TUBE & VALVE CO.
186 Franklin Street BOSTON, MASS.

Solve the "New Business" Problem With SHARP'S CLEANOUT WATER HEATER



Sharp's heater is replacing coil heaters wherever it is introduced. It is built for hard water usage. Sharp's won't become useless as coil heaters do when clogged with lime. Sharp's can be quickly and easily cleaned with small expense. That's why so many people purchase Sharp's.

Write or wire for particulars. It will be a big step toward getting "new business from old buildings."

General Manufacturing Co.
Heater Dept.
67, 19th St. WHEELING, W. VA.

PATENTS

Over twenty years' experience in handling patent litigation, rendering opinions as to infringement and validity, and the preparation and prosecution of application for patents. References: Joseph A. Vogel Co., Wilmington, Del.; District National Bank, Washington, D. C.; Martindale's American Law Directory; Dun or Bradstreet. Correspondence invited.

TALBERT & TALBERT, Patent Lawyers
5708 TALBERT BLDG. - WASHINGTON, D. C.

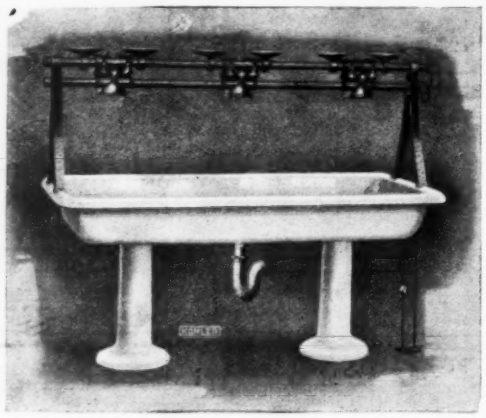


Plate F-914A. Factory Wash Sink

Business Slack?

Factory sanitation means war-time business for you. The war has created some new industries and expanded others. And industrial leaders are realizing that they can promote the health and efficiency of their men by installing

KOHLER WARE

always of one quality—the highest

Wash sinks are hygienic, if they are of the famous Kohler one-piece construction and protected by the Kohler pure white enamel. You can meet every factory need with practical and convenient sinks produced by Kohler of Kohler.

The Kohler permanent trade-mark in the enamel is our pledge of quality.

Our books, "Kohler of Kohler" and "Kohler Ware for Factories," will be sent on request.

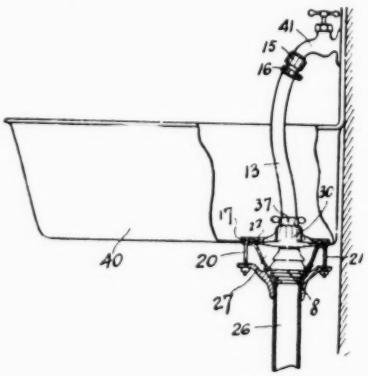
Kohler Co.
Founded 1873
Kohler, Wis.

Shipping Point: Sheboygan, Wis.

Boston New York Philadelphia Washington
Pittsburgh Detroit Chicago Indianapolis
St. Paul St. Louis Houston
San Francisco Seattle London

ically exert a downward pressure on the rod to feed the cutting member into cutting position.

1,271,608. Household Tool for Repairing the Valve Seats of Faucets and the Like. August Pann, Brooklyn, N. Y. A tool for repairing the valve seats of faucets and the like, comprising a rotatable stem, a sleeve member mounted on said stem at the lower end thereof, cutting teeth on said stem at the lower end of said sleeve member for engaging the valve seat and smoothing the same when the stem is rotated, said sleeve member extending substantially into contact with the inside wall of the faucet to constitute thereby a centralizing bearing or guide during the operation of the tool, a ratchet fixed upon said stem above said sleeve member, a handle bar rotatably mounted at one end on said stem and having a spring-pressed pawl for engaging the teeth of said ratchet, whereby the forward operation of said handle bar rotates said stem and cutting teeth, while the reverse or return movement of said handle bar causes said pawl to ride idly over the teeth of said ratchet, and a head or knob rotatably mounted on the upper end of said stem for holding the tool by hand and exerting the necessary downward pressure on the cutting teeth when the same are moved over the valve seat.



1,271,853.

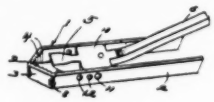
1,271,853. Sink Pipe Cleaning Device. William Wells Caverley, Vancouver, British Columbia, Canada. For use with a sink and sink pipe, a plate ring surrounding the sink outlet of less diameter than the same and provided with diametrically opposite slots, a tubular connection having one end adapted for coupling to a water service and having its opposite end formed as a nozzle adapted to fit the said pipe so that its peripheral surface will form a joint therewith, a strut mounted on said tubular connection the ends of which are adapted to pass through the slots of the said plate ring to engage the underside of the same, and vertically adjustable means extending between said strut and the said nozzle and bearing directly on the nozzle.

1,271,876. Pipe Clamp. Ivan B. Fairbanks, Emmett, Kan. A pipe clamp, comprising a yoke member, including a pair of legs and a V-shaped head joining the legs at one end, the opposing faces of the V-shaped head having a series of clamping teeth formed thereon, a clamping head pivoted between the legs and having a jaw to co-operate with the V-shaped head, an elongated handle extending rearwardly from the head, and an adjustable stop member entered into the head, said adjustable stop member also acting as a release device.

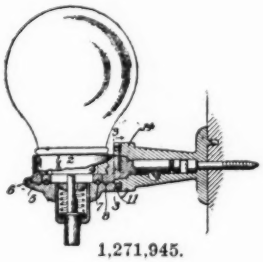
1,271,945. Dispensing Device for Liquid Soap, Etc. Lucie Claire Rosenstock, Nutley, N. J. In a dispensing device for liquid soap, etc., a container assembly and a measure assembly hingeably connected together, means for holding the said measure assembly against lateral

movement on said container assembly when in closed position and means for holding said measure assembly in closed position on said container assembly.

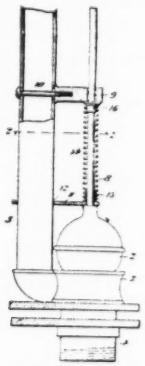
1,272,091. Valve for Flushing Tanks. Thomas H. Quinn, New Haven, Conn. In combination with the valve seat and overflow pipe of a flushing tank, a valve to close downwardly on the valve seat and having an upwardly extending rod, a leader arm bearing on the valve and connected to the overflow pipe for vertical movement thereon, a spring bearing downwardly on the leader arm and hence exerting its tension to normally close the valve and to tightly hold the latter in closed position on the valve seat, and a guide arm for the valve rod and attached to the overflow pipe, the spring being arranged on the valve rod and between the guide arm and the leader arm.



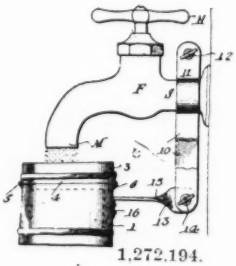
1,271,876.



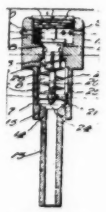
1,271,945.



1,272,091.



1,272,194.



1,272,251.

1,272,194. Soapsuds Mixer. Spencer Bickerton, Honolulu, Hawaii. A soap holder comprising a support, a cylindrical open ended body secured thereto, a cylindrical open ended cover hinged upon said body and abutting the edge thereof, outwardly stamped beads in the periphery of said body and said cover, and screens disposed within the body and cover and engaged in the respective beads, and means secured to said body and adapted for attachment to a faucet.

1,272,251. Relief Valve. William J. Glenn, Steelton, Ontario, Canada. In a relief valve of the class described, the combination with the water front of a stove; of an upright valve casing whose body passes through the upper wall of said water front and has a head having a series of radial openings and a threaded aperture in its top, a plug removably closing said aperture, a band within the head adapted to be selectively disposed to cover certain of said openings, fastening means through the band and one of the openings, and an upwardly opening spring closed valve within said casing, for the purpose set forth.

Incompetent.

We'll say this for the kaiser—he hasn't so far attempted to give any of his six sons one of those jobs which call for intelligence.—"Detroit Free Press."

Right At Home.

"And what were you in civilian life?" asked the captain.

"I was traveling salesman, sir," replied the recruit.

"That's all right, then. You'll get plenty of orders around here."—Exchange.

SAFE-T-Y

ASSURED

You can guarantee your customer peace of mind regarding a flooded cellar or basement when you install the

TRADE PENBERTHY MARK

Automatic Cellar Drainer

It keeps the place securely dry without any attention whatever. Operates automatically by steam or water and costs practically nothing to maintain. Noiseless. Requires very little space. Easy to install. Requires only small sump.

NEW Business *from* OLD Buildings

can easily be secured now. Go after the home-owners in your town whose cellars are not protected from flood water and sell them the PENBERTHY Drainer. You will make a good profit both on the sale and installation.

Order from your jobber.

Penberthy Injector Company

(Established 1886) Detroit, Mich.

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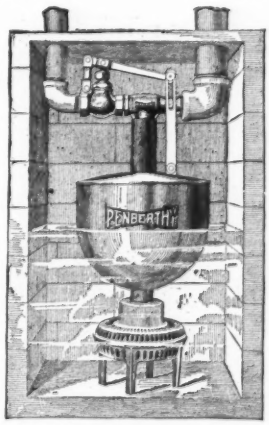
All Working Parts Above Water

Will Not Rust, Clog or Corrode



All Parts Except Strainer Made of Brass

Made in Five Sizes

Classified Advertisements

The charge for advertisements under this heading is $1.00 for 25 words or less, including heading and address; 4 cents each for additional words. To insure insertion, copy and remittance should reach us by Wednesday morning.

Situations Open

WANTED — THREE FIRST CLASS plumbers. Wages $5.50 per day for eight hours. Steady work the year round. Address Box 110, Memphis, Tenn. 8-17

WANTED—FIRST CLASS PLUMBER, one preferred with some experience on heating and residence water supply systems. Address Fred J. Douglass, Birmingham, Mich. 8-3; 10; 17

WANTED—AN AMBITIOUS BOY OR man who can furnish best references, with some experience in pipe fitting. Address L. H. Atwell, Grove City, Pa. 8-17

Situations Wanted.

WANTED — STEADY POSITION, BY good, all-round plumber. Good lead worker. Can lay out own work. Also do steam and hot water heating. Address 2550, care "Domestic Engineering," Chicago. 8-17

Miscellaneous.

WE BUY IRON PIPE COUPLINGS—spot cash. How many, either pounds or pieces have you of various sizes? Gwilliam Supply Co., 615 Christian Street, Philadelphia, Pa. 10-6,tf

WE BUY AND SELL USED BOILERS and radiators. D. B. Plbg. & Htg. Sales Co., Fort Wayne, Ind. 8-3; 24

SELL YOUR SURPLUS COUPLINGS and fittings. Write us. The A. & J. Mfg. Co., 557 W. Lake St., Chicago. tf

Government Proposals

Treasury Department, Supervising Architect's Office, Washington, D. C., August 8, 1918.—Sealed proposals will be opened in this office at 3 p. m., Sept. 5, 1918, for the completion of the Mechanical Equipment (Except elevator and lighting fixtures), of the United States Custom House, Appraisers Stores and Court House at Wilmington, N. C. Drawings and specification may be obtained from the superintendent of construction at the building or at this office in the discretion of the Supervising Architect. Jas. A. Wetmore, Acting Supervising Architect. 8-17; 24

Treasury Department, Supervising Architect's office, Washington, D. C., August 9, 1918.—Sealed proposals will be opened in this office at 3 p. m. August 30, 1918, for repairs to mechanical equipment in the U. S. Marine Hospital, St. Louis, Mo., in accordance with the specification, copies of which may be had at this office in the discretion of the Supervising Architect. Jas. A. Wetmore, Acting Supervising Architect. 8-17; 24.

For Sale.

FOR SALE—HEATING PLANT: BIDS will be received by the Mapleton Board of Education, Mapleton, Iowa, up to 8 o'clock Friday evening, August 30th, for the selling of 2 American Boilers No. S4612 manufactured by the Kellogg-Mackay Co., and about 3,542 feet of radiation and accessible piping. These boilers and radiation are in good condition. Terms cash. The board reserves the right to accept or reject any or all bids. N. W. Pike, Secretary. 8-17; 24

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Practical Steam and Hot Water Heating and Ventilating, A. G. King.... 3.00

A Practical Manual of Steam and Hot Water Heating, Edward R. Pierce.. 2.50

Domestic Engineering
407 S. Dearborn St., Chicago

The BELL Washer

Used Everywhere—Best Anywhere

The **only** washer that will stand **hot water** as well as cold.

Celebrated for lasting quality.

Look for the trademark stamped on every Genuine Bell Washer.

Our line of Hot Water Specialties also includes Fuller Balls, Steam Valve Discs, and we make small molded rubber goods of all kinds.

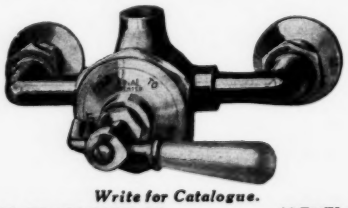
Write for prices and discounts. Samples on request.

Estate of Andrew Bell
2-4-6 Commercial Street, Newark, N. J.

ROYAL

Mixing Valve for Showers

Simple in Operation—Few Working Parts.



Write for Catalogue.
THE ROYAL BRASS MFG. CO. CLEVELAND, OHIO

The Trap That Does The Work

Every sink you install should be equipped with the **Boston Grease Trap.** It collects and holds all grease and keeps the pipes free. Very large handhole makes it easiest to clean out. The **only** grease trap you will use after giving it a trial.

Write for circulars and prices.

R. ESTABROOK'S SONS, 1st and C Streets, SOUTH BOSTON, MASS.

The "JIFFY"
COLLAPSIBLE
Laundry Tray Frame

The "JIFFY" Means Profit to You

It will save you 1½ hours in setting a two-part and 4 hours on a three-part tray over old methods. Your saving in time gives you the "Jiffy" FREE. Your profit is the cost of the old supports plus a better job. No tools required but a pair of hands.

Go and Get the "JIFFY" at Your Jobber.

THE FORD DONLEY CO. 1940 East 117th St. **CLEVELAND, O.**